

Steroidal Sapogenins LX

This is a report of the chemical examination of the sixth 1,000 accessions in a survey of plants for steroidal sapogenins. Data are given for about 1,030 species in 128 families, practically all collected in the United States. In *Agave* a new record of 4.4% genin, mostly smilagenin, was established. The collections of *Dioscorea composita* were uniformly high in diosgenin, with a new record of 10.1%. *D. spiculiflora* regularly contained diosgenin and yamogenin, and the highly desirable gentrogenin and correlogenin. A sample of seed of a *Yucca* sp. gave 11.1% sarsasapogenin. The recently discovered willagenin was found again in a *Yucca* sp. Of the total species examined, about 10% contained alkaloids, some 64 of them new to the record. This is the final report on this project of plant screening.

THIS is a continuation of the previous reports (1-8) on the first five 1,000 plant accessions in our survey of plants for steroidal sapogenins and other constituents. It is the final report on this project and covers about 1,030 species in 128 families. A few accessions (with accession numbers less than 5,000) from previous lists are included because repeat analyses showed the presence of alkaloids.

PROCUREMENT

With the publication of these results, the general sample procurement and chemical screening phase of the U. S. Department of Agriculture's search for plant sources of steroidal sapogenins useful in the elaboration of cortisone comes to a close. In the 12 years that have elapsed since the beginning of the program when Dr. John T. Baldwin explored West Africa for species of *Strophanthus* and *Dioscorea*, over 6,000 plant samples, representing 208 families and 1,397 genera, have been collected from nearly all parts of the world for chemical analysis at the Eastern Utilization Research and Development Division. Over two-thirds of the families of *Angiospermae* recognized in Engler and Prantl's "Die natürlichen Pflanzenfamilien" are represented. Obviously some of the families are very inadequately represented and it cannot be said that any has been thoroughly sampled. For the purposes of a screening program, however, coverage has been sufficiently broad and, in the more promising families, sufficiently deep to indicate that the chances are slim indeed of finding better sources of steroidal sapogenins than have been found in the genus *Dioscorea*. Species of *Agave* and *Yucca*, though some are as rich in steroidal sapogenins as *Dioscorea*, do not compare favorably with the latter in crop potential. Efforts

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are now being concentrated on fashioning a successful crop from species of *Dioscorea*.

Samples reported in Table I were collected, with few exceptions, from four areas: Mexico, Central America, southwestern United States, and the West Indies. This is not entirely fortuitous for these areas are rich in members of the three families represented. Table II, reporting on 594 genera in 128 families, reveals that the heaviest concentration of collecting activity was in the Atlantic Coast states with the Southwest and Pacific Coast states more heavily represented than in previous reports of this series.

Plant identification work, which could not keep pace with the rapid expansion of the program in earlier years, has now provided names for most of the species studied. Some taxonomically difficult genera such as *Agave* and *Dioscorea* are subjects of monographic study by botanists of the New Crops Research Branch. As these studies progress, authoritative specific determinations will be made for those now listed by generic name only.

RESULTS

Table I lists the plants containing steroidal sapogenins, mostly *Agave*, *Dioscorea*, and *Yucca*, but with one *Ruscus*. Tests for nonsteroidal constituents were not made on most of these and, where made, nothing noteworthy was found.

Table II lists the plants not containing steroidal sapogenins and shows the results of tests for saponin, flavonoids, alkaloids, and tannins.

As to steroidal sapogenins, there are several items of note. The 4.4% in 6362, *Agave* sp., is the highest in our experience, the previous highs being 3.3% to 3.6%. The 3.6% in 6382, *Agave lecheguilla*, is noteworthy in that the material was the leaf pulp after scutching out the fiber.

Dioscorea composita has always been a good, but erratic, source of diosgenin, having varied from zero to a previous record of 10.1%. The present collections of this species are uniformly high and include a new record of 13.2%. *D. spiculiflora* is the one species which contains the two recently discovered genins, gentrogenin and correlogenin (9), with highly desired chemical properties for the production of cortisone. These genins seem always to be accompanied by diosgenin and yamogenin. In most

TABLE I.—PLANTS CONTAINING STEROIDAL SAPOGENINS

5780	<i>Dioscorea composita</i>	6.4	d100
5781	<i>Dioscorea composita</i>	5.4	d100
5782	<i>Dioscorea composita</i>	4.0	d100
5783	<i>Dioscorea composita</i>	6.3	d100
5784	<i>Dioscorea composita</i>	4.7	d100
5785	<i>Dioscorea composita</i>	6.0	d60; ya40
5786	<i>Dioscorea composita</i>	5.4	d100
5787	<i>Dioscorea composita</i>	3.5	d90; ya10
5788	<i>Dioscorea composita</i>	4.4	d100
5789	<i>Dioscorea composita</i>	6.5	d100
6257	<i>Dioscorea composita</i>	5.1	d95; ya
6258	<i>Dioscorea composita</i>	6.8	d95; ya
6259	<i>Dioscorea composita</i>	1.7	ni
6260	<i>Dioscorea composita</i>	4.3	d, ya
6261	<i>Dioscorea composita</i>	7.0	ni
6262	<i>Dioscorea composita</i>	5.2	d100
6263	<i>Dioscorea composita</i>	5.6	d100
6264	<i>Dioscorea composita</i>	5.6	d, ya
6265	<i>Dioscorea composita</i>	3.5	d100
6266	<i>Dioscorea composita</i>	5.3	d100
6267	<i>Dioscorea composita</i>	5.8	d100
6268	<i>Dioscorea composita</i>	3.4	d, ya
6269	<i>Dioscorea composita</i>	6.8	d, ya
6270	<i>Dioscorea composita</i>	13.2	d89
6271	<i>Dioscorea composita</i>	5.3	d, ya
6272	<i>Dioscorea composita</i>	5.6	d, ya
5595	<i>Dioscorea convolvulacea</i>	4.7	d88; ya
5774	<i>Dioscorea floribunda</i>	3.6	d50; ya50
5775	<i>Dioscorea floribunda</i>	4.0	d + ya100
5776	<i>Dioscorea floribunda</i>	2.6	d50; ya50
5777	<i>Dioscorea floribunda</i>	6.1	d80; ya40
6051	<i>Dioscorea floribunda</i>	1.4	ni
6225	<i>Dioscorea floribunda</i>	5.2	d75; ya
6226	<i>Dioscorea floribunda</i>	1.6	d93; ya
5315	<i>Dioscorea Mexicana</i>	0.03	d55; ya
5845	<i>Dioscorea Mexicana</i>	0.16	ni
5317	<i>Dioscorea spiculiflora</i>	3.6	d + ya65; ge + co35
5767	<i>Dioscorea spiculiflora</i>	3.7	d + ya70; ge + co30
5768	<i>Dioscorea spiculiflora</i>	5.5	d + ya50; ge + co50
5769	<i>Dioscorea spiculiflora</i>	4.7	d + ya45; ge + co55
5770	<i>Dioscorea spiculiflora</i>	3.8	d + ya60; ge + co40
5771	<i>Dioscorea spiculiflora</i>	3.0	d + ya65; ge + co35
5772	<i>Dioscorea spiculiflora</i>	2.0	g + ya55; ge + co45
5773	<i>Dioscorea spiculiflora</i>	5.0	d + ya45; ge + co55
6273	<i>Dioscorea spiculiflora</i>	5.0	ge + co44; d, ya
6274	<i>Dioscorea spiculiflora</i>	5.9	ya + co12; d, ya
6275	<i>Dioscorea spiculiflora</i>	4.2	ge + co80
6276	<i>Dioscorea spiculiflora</i>	6.0	d + ya70; ge, co
6277	<i>Dioscorea spiculiflora</i>	2.0	ge + co33; d, ya
6278	<i>Dioscorea spiculiflora</i>	3.1	ge + co45; d, ya

Accession No.	Species	Collection No.	Source	Date Collected	Plant Part	Saponigenin Identified, % of Total	
						Hemol- ysis	Total, M.F.B., %
6279	<i>Dioscorea spiculiflora</i>		Chiapas, Mexico	4/57	t	3.2	ge + co23; d, ya
6280	<i>Dioscorea spiculiflora</i>		Chiapas, Mexico	4/57	t	0.8	ni
6281	<i>Dioscorea spiculiflora</i>		Chiapas, Mexico	4/57	t	3.9	ge + co55; d, ya
6425	<i>Dioscorea villosa</i>		Marshall, Ill.	8/57	t	1.3	ni
5172	<i>Dioscorea sp.</i>		G. D. M.	9/54	r	...	...
5308	<i>Dioscorea sp.</i>		Santa Cruz, Bolivia	1/55	t	...	...
5314	<i>Dioscorea sp.</i>		G. D. M.	3/55	t	...	...
5316	<i>Dioscorea sp.</i>		G. D. M.	3/55	t	...	...
5344	<i>Dioscorea sp.</i>		Tallahassee, Fla.	3/55	t	...	...
5790	<i>Dioscorea sp.</i>		Veracruz, Mexico	4/55	w	1.0	d100
4791	<i>Dioscorea sp.</i>		Veracruz, Mexico	12/55	t	0	...
5792	<i>Dioscorea sp.</i>		Veracruz, Mexico	12/55	t	0	...
5815	<i>Dioscorea sp.</i>		Chiapas, Mexico	12/55	t	0	...
5816	<i>Dioscorea sp.</i>		G. D. M.	1/55	t	2.9	ya35
5817	<i>Dioscorea sp.</i>		Puerto Rico	1/56	t	0	...
5924-O	<i>Dioscorea sp.</i>		Puerto Rico	1/56	t	6.1	d100
6025	<i>Dioscorea sp.</i>		British Honduras	1/56	t	2.8	ni
6026	<i>Dioscorea sp.</i>		Turrialba, Costa Rica	1/57	t	0	...
6222A	<i>Dioscorea sp.</i>		British Honduras	7/56	t	3.4	ni
6222B	<i>Dioscorea sp.</i>		British Honduras	7/56	t	3.29	ni
6223	<i>Dioscorea sp.</i>		British Honduras	3/57	t	0	...
6224	<i>Dioscorea sp.</i>		San Sebastian, Guatemala	3/57	s	0	...
6227	<i>Dioscorea sp.</i>		Guatemala	3/57	t	4.7	d81; ya
6228	<i>Dioscorea sp.</i>		Costa Rica	3/57	t	6.2	d75; ya
6229	<i>Dioscorea sp.</i>		Turrialba, Costa Rica	3/57	t	4.0	d70; ya
6230	<i>Dioscorea sp.</i>		Turrialba, Costa Rica	3/57	t	1.5	d93; ya
6294	<i>Dioscorea sp.</i>		British Honduras	5/57	t	1.7	d86; ya
6295	<i>Dioscorea sp.</i>		British Honduras	5/57	t	0	...
6296	<i>Dioscorea sp.</i>		British Honduras	5/57	t	...	...
6297	<i>Dioscorea sp.</i>		British Honduras	5/57	t	...	...
6402	<i>Dioscorea sp.</i>		Brazil	7/57	r	...	...
6403	<i>Dioscorea sp.</i>		Brazil	7/57	r	...	...
6404	<i>Dioscorea sp.</i>		Brazil	7/57	r	...	...
6401	<i>Ruscus aculeatus</i>		Bologna, Italy	7/57	r	...	...
5813A	<i>Yucca Australis</i> (<i>Y. filifera</i>)		Huntington, Calif.	12/55	r, crowns	0.12	r, nr
5813B	<i>Yucca Australis</i> (<i>Y. filifera</i>)		Huntington, Calif.	12/55	r, fr	0.19	ss100
6317	<i>Yucca baccata</i> var. <i>brenifolia</i> (<i>Y. Arizonicia</i>)		Sonora, Mexico	5/57	empty pod	-	...
5934A	<i>Yucca baccata</i> var. <i>macrocarpa</i> (<i>Y. torreyi</i>)		Brewster Co., Tex.	5/56	sd	1.2	ss100
5934B	<i>Yucca baccata</i> var. <i>macrocarpa</i> (<i>Y. torreyi</i>)		Brewster Co., Tex.	5/56	fl	1.2	ss100
6283	<i>Yucca baccata</i> var. <i>macrocarpa</i> (<i>Y. torreyi</i>)		Brewster Co., Tex.	4/57	fl	1.9	ss100
6284	<i>Yucca baccata</i> var. <i>macrocarpa</i> (<i>Y. torreyi</i>)		Brewster Co., Tex.	4/57	s, fl	1.3	ss100
5923	<i>Yucca elata</i>		W. Caliente, Nev.	5/57	s, fl	1.7	t + h32
5227-O	<i>Yucca filamentosa</i> (<i>Y. filamentosa</i>)		Brunswick Co., Tex.	5/56	y, fl	0.5	0.5
			Montgomery Co., Pa.	10/54			

6367	<i>Yucca</i> sp.	Bacanora, Mexico	6/57	wd	ss
6368	<i>Yucca</i> sp.	Bacanora, Mexico	6/57	1	C=O 57; ss38;
6369	<i>Yucca</i> sp.	Bacanora, Mexico	6/57	1, dead	diOH ss55; w30
6370	<i>Yucca</i> sp.	Bacanora, Mexico	6/57	1, dead	140; g, k
6371A	<i>Yucca</i> sp.	Bacanora, Mexico	6/57	sd	ss99
6371B	<i>Yucca</i> sp.	Bacanora, Mexico	6/57	pod	ss98
6372	<i>Yucca</i> sp.	Sonora, Mexico	6/57	1	ss98; diOH 0.9

TABLE II.—PLANTS NOT CONTAINING STEROIDAL SAPOGENINS

Accession No.	Species	Collection	Source	Date Collected	Plant Part	Hemolysis		Flavonoids	Alkaloids	Tannins
						Hemolysis	Flavonoids			
AMARYLLIDACEAE										
5266	<i>Hymenocallis</i> sp.		Leon Co., Fla.	10/54	l, s, r	-	-	0	+	:
5173	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5174	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5175	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5176A	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5176B	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5177A	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5177B	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5178A	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5178B	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5179A	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5179B	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5180A	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5180B	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5181A	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
5181B	<i>Manfreda</i> sp.		Glenn Dale, Md.	9/54	l, r	0	0	0	..	0
ANACARDIACEAE										
5870	<i>Anacardium excelsum</i>		Atenas, Costa Rica	4/56	l, s, b	..	..	0	..	..
5520	<i>Mangifera indica</i>		Lee Co., Fla.	8/55	l, tw	..	..	0	..	..
6103A	<i>Pistacia Chinensis</i>		Chico, Calif.	10/56	l, tw	..	..	0	..	..
6103B	<i>Pistacia Chinensis</i>		Chico, Calif.	10/56	fr	..	..	0	..	..
6118A	<i>Pistacia lentiscus</i>		Chico, Calif.	10/56	fr	..	..	0	..	..
6118B	<i>Pistacia lentiscus</i>		Chico, Calif.	10/56	tw	..	..	0	..	..
6123A	<i>Pistacia lentiscus</i>		Chico, Calif.	10/56	tw	..	..	0	..	..
6123B	<i>Pistacia lentiscus</i>		Chico, Calif.	10/56	tw	..	..	0	..	..
6127A	<i>Pistacia terebinthus</i>		Chico, Calif.	10/56	tw	..	..	0	..	..
6127B	<i>Pistacia terebinthus</i>		Chico, Calif.	10/56	fr	..	..	0	..	..
6127C	<i>Pistacia terebinthus</i>		Chico, Calif.	10/56	wd	..	..	0	..	..
6121A	<i>Pistacia vera</i>		Chico, Calif.	10/56	fr	..	..	0	..	..
6121B	<i>Pistacia vera</i>		Chico, Calif.	10/56	tw	..	..	0	..	..
5278	<i>Rhus copallina</i>		Leon Co., Fla.	11/54	l, s, r, fr	..	..	0	..	..
6043-A	<i>Rhus copallina</i>		Woodstown, N. J.	10/57	sd residue	..	..	0	..	..
6043-B	<i>Rhus copallina</i>		Woodstown, N. J.	10/57	chaff & seed	..	..	0	..	..
5567	<i>Rhus microphylla</i>		Brewster Co., Tex.	8/55	l, tw	..	..	0	..	..
5238	<i>Rhus radicans</i>		Baltimore Co., Md.	10/54	l, s, fr	..	..	0	..	..
5538	<i>Rhus virens</i>		Brewster Co., Tex.	8/55	l, s	..	..	0	..	..
6181A	<i>Schinopis lorentzii</i>		C. G. F.	11/57	s	..	..	0	..	..
6181B	<i>Schinopis lorentzii</i>		C. G. F.	11/57	s	..	..	0	..	..
5514	<i>Schinus terebinthifolius</i>		Collier Co., Fla.	8/55	l, tw	..	..	0	..	..
ANNONACEAE										
3030	<i>Annona bullata</i>		C. G. F.	9/52	l	..	..	0	..	..
6067A	<i>Annona purpurea</i>		C. G. F.	8/56	l	..	..	0	..	..
6067B	<i>Annona purpurea</i>		C. G. F.	8/56	tw	..	..	0	..	..

5395A	<i>Asimina angustifolia</i>	Leon Co., Fla.	7/55	1	tw
5395B	<i>Asimina angustifolia</i>	Leon Co., Fla.	8/54	1, s	
5069	<i>Asimina oblonga</i>	Citrus Co., Fla.	5/56	1, s	
5900	<i>Gnaphelia sp.</i>	Guanacaste, Costa Rica			
6340	<i>Alafia sp.</i>	Beltsville, Md.	6/57	r	
6341	<i>Alafia sp.</i>	Beltsville, Md.	6/57	sd	
6342	<i>Alafia sp.</i>	Beltsville, Md.	6/57	fr	
6343	<i>Alafia sp.</i>	Beltsville, Md.	6/57	sd	
5436	<i>Allamanda cathartica</i>	Beltsville, Md.	6/57	sd	
6086A	<i>Alstonia macrophylla</i>	Highlands Co., Fla.	8/55	1, tw	
6086B	<i>Alstonia macrophylla</i>	C. G. F.	9/56	1	
6287	<i>Amsonia standleyi</i>	C. G. F.	9/56	tw	
6288	<i>Amsonia standleyi</i>	Candellaria, Tex.	4/57	1, s, fl, fr	
5564+	<i>Apoconum androvaemifolium</i>	Candellaria, Tex.	4/57	r	
5871-O	<i>Apoconum cannaeifolium</i>	Jeff Davis Co., Tex.	8/55	1, s	
5367	<i>Cerebra odollam</i>	Montgomery Co., Pa.	7/56	1	
5510	<i>Echites umbellata</i>	Okinawa	6/55	1, s	
6088	<i>Funnia elasticia</i>	Monroe Co., Fla.	8/55	w	
6012	<i>Kirkia elatine</i>	C. G. F.	9/56	1, tw, fr	
5590	<i>Macrosiphonia macrosiphon</i>	Va.	7/56	1, s, r, fl	
6310	<i>Macrosiphonia sp.</i>	Jeff Davis Co., Tex.	8/55	1, s, r, fl	
6374	<i>Messersenia-adutis</i>	Sonora, Mexico	5/57	1, s, r	
6027-O	<i>Nerium oleander</i>	Mexico	6/57	sd	
5306A	<i>Ochroma elliptica</i>	Charleston, S. C.	10/57	1, tw	
5306B	<i>Ochroma elliptica</i>	C. G. F.	11/54	1	
5306C	<i>Ochroma elliptica</i>	C. G. F.	11/54	tw	
6324	<i>Sinemaderia palmeri</i>	C. G. F.	11/54	fr	
6354	<i>Strophantus amboensis</i>	Sonora, Mexico	5/57	tw	
6334	<i>Strophantus congoensis</i>	Beltsville, Md.	6/57	sd	
6337	<i>Strophantus congoensis</i>	Beltsville, Md.	6/57	fr	
6346	<i>Strophantus courmontii</i>	Beltsville, Md.	6/57	sd	
6350	<i>Strophantus ecaudatus</i>	Beltsville, Md.	6/57	sd	
6352	<i>Strophantus gerardii</i>	Beltsville, Md.	6/57	sd	
6348	<i>Strophantus grandiflorus</i>	Beltsville, Md.	6/57	sd	
6338	<i>Strophantus gratus</i>	Beltsville, Md.	6/57	sd	
6356	<i>Strophantus gratus</i>	Beltsville, Md.	6/57	sd, pod	
6339	<i>Strophantus hispidus</i>	Beltsville, Md.	6/57	sd	
6349	<i>Strophantus intermedius</i>	Beltsville, Md.	6/57	sd	
6333	<i>Strophantus mortehani</i>	Beltsville, Md.	6/57	sd	
6356A	<i>Strophantus periploca</i>	Beltsville, Md.	6/57	rb	
6353	<i>Strophantus petersonianus</i>	Beltsville, Md.	6/57	sd, pod	
6347	<i>Strophantus preussii</i>	Beltsville, Md.	6/57	sd	
6336	<i>Strophantus sarmentosus</i>	Beltsville, Md.	6/57	sd	
6351	<i>Strophantus wightianus</i>	Beltsville, Md.	6/57	sd	
6335	<i>Strophantus sp.</i>	Beltsville, Md.	6/57	sd	
6344	<i>Strophantus sp.</i>	Beltsville, Md.	6/57	fr	
6345	<i>Strophantus sp.</i>	Beltsville, Md.	6/57	sd	
6355	<i>Strophantus sp.</i>	Beltsville, Md.	6/57	sd, pod	

Accession No.	Species	Collection	Source	Date Collected	Plant Part	Hemolysis	Flavonoids	Alkaloids	Tannins
6357	<i>Strophanthus</i> sp.	Beltsville, Md.	APOCYNACEAE	6/57	sd	-	0	0	..
6358	<i>Strophanthus</i> sp.	Beltsville, Md.		6/57	sd	-	0	0	..
6359	<i>Strophanthus</i> sp.	Beltsville, Md.		6/57	sd	-	0	0	..
6420	<i>Urechites lutea</i>	Monroe Co., Fla.		8/55	l, tw	-	0	0	..
5758	<i>Vinca minor</i>	Brewster Co., Tex.		10/55	l, s, fl	-	0	0	..
5905-O	<i>Vinca minor</i>	Montgomery Co., Pa.		8/56	1	-	0	0	..
5019	<i>Ilex laevigata</i>	Sheffield, Mass.	AQUIFOLIACEAE	8/54	l, s, fr	-	0	+	..
5253	<i>Ilex myrtifolia</i>	Calthoun Co., Fla.		10/54	l, s, fr	-	0	0	..
6171	<i>Ilex vomitoria</i>	...		12/56	1	-	0	0	++
5598	<i>Amorphophallus bulbifer</i>	C. G. F.	ARACEAE	8/55	l, s	-	0	0	..
5261	<i>Colocasia antiquorum</i>	Leon Co., Fla.		10/54	l, s, r	-	0	0	..
5263	<i>Colocasia odorata</i>	Leon Co., Fla.		10/54	l, s	-	0	0	..
5262	<i>Colocasia odorata</i>	Leon Co., Fla.		10/54	l, s	-	0	0	..
6194	<i>Monnieriantha arboreocarpa</i>	Dutch Guiana		1/57	sd	-	0	0	..
6282	<i>Pholidodendron</i> sp.	Mexico		4/57	s	-	0	0	..
5449	<i>Pistia stratiotes</i>	Palm Beach Co., Fla.		8/55	w	-	0	0	..
6413	<i>Gilibertia arborea</i>	Chiapas, Mexico	ARALLACEAE	8/57	l, s	-	0	0	..
5903-O	<i>Hedera helix</i>	Montgomery Co., Pa.		8/56	1	-	0	0	..
5542	<i>Asclepias brachystephana</i>	Jeff Davis Co., Tex.	ASCLEPIADACEAE	8/55	l, s, r, fr	-	0	0	..
6098	<i>Asclepias brachystephana</i>	Brewster Co., Tex.		10/56	l, s	-	0	0	..
5548	<i>Asclepias capricornu</i>	Jeff Davis Co., Tex.		8/55	l, s, r	-	0	0	..
5544	<i>Asclepias curassavica</i>	Palm Beach Co., Fla.		8/55	w	-	0	0	..
5541	<i>Asclepias gairdneri</i>	Jeff Davis Co., Tex.		8/55	l, s, r, fl	-	0	0	..
5878-OA	<i>Asclepias incarnata</i>	Montgomery Co., Pa.		8/56	fl	-	0	0	..
5878-OB	<i>Asclepias incarnata</i> var. <i>pulchra</i> (<i>Asclepias pulchra</i>)	Montgomery Co., Pa.		8/56	r	-	0	0	..
5879-O	<i>Asclepias incarnata</i> var. <i>pulchra</i> (<i>Asclepias pulchra</i>)	Montgomery Co., Pa.		8/56	l, fl, r	-	0	0	..
5906-O	<i>Asclepias latifolia</i>	Montgomery Co., Pa.		8/56	w	-	0	0	..
5761	<i>Asclepias linearis</i>	Jeff Davis Co., Tex.		8/57	r	-	0	0	..
6421	<i>Asclepias perennis</i>	Sonorae, Mexico		8/57	w	-	0	0	..
5428	<i>Asclepias subverticillata</i>	Dixie Co., Fla.		8/55	w	-	0	0	..
6139A	<i>Asclepias subverticillata</i>	Culberson Co., Tex.		10/56	l	-	0	0	..
6139B	<i>Asclepias subverticillata</i>	Culberson Co., Tex.		10/56	s	-	0	0	..
5811	<i>Asclepias subverticillata</i>	Jeff Davis Co., Tex.		12/55	l, s	-	0	0	..
5877-O	<i>Asclepias syriaca</i>	Montgomery Co., Pa.		8/56	l, s, r	-	0	0	..
5917-OA	<i>Asclepias syriaca</i>	Philadelphia, Pa.		9/56	sd	-	0	0	..
5920-O	<i>Asclepias syriaca</i>	Philadelphia, Pa.		9/56	r	-	0	0	..
5894-O	<i>Asclepias tuberosa</i>	Perry Co., Pa.		8/56	l, r	-	0	0	..

5094	<i>Asclepias</i> sp.	Polk Co., Fla.	8/54	l, s, r, fl
5519	<i>Cryptostegia grandiflora</i>	Lee Co., Fla.	8/55	l, tw
5169	<i>Morrenia odorata</i>	Glen Dale, Md.	9/54	l, s
5493	<i>Batis maritima</i>	Monroe Co., Fla.	8/55	l, tw
5030	<i>Berberis vulgaris</i>	BERBERIDACEAE	8/54	l, s, fr
5925	<i>Jeffersonia diphylla</i>	Berkshire Co., Mass.	5/56	l, s, r
6321	<i>Odostemum longipes</i>	Washington Co., Md.	5/57	wd
		Sonora, Mexico		
5111	<i>Alnus maritima</i>	BETULACEAE	8/54	++
5017	<i>Corylus cornuta</i>	Sussex Co., Del.	0	+
		Sheffield, Mass.	8/54	+
6129	<i>Catalpa hybrida</i>	BIGNONIACEAE	10/56	fr
5415	<i>Doxantha uncinata-cati</i>	Chico, Calif.	7/56	w
6201A	<i>Jacaranda acutifolia</i>	Leon Co., Fla.	1/57	l, s
6201B	<i>Jacaranda acutifolia</i>	C.G. F.	1/57	tw
6201C	<i>Jacaranda acutifolia</i>	C.G. F.	1/57	sd
6201D	<i>Jacaranda acutifolia</i>	C.G. F.	1/57	sd
6168	<i>Spathodea nilotica</i>	C.G. F.	12/56	l, tw
-6977	<i>Fecoma gundlachiana</i>	C.G. F.	9/56	l, tw
			0	0
6417	<i>Ochroma lagopus</i>	BOMBACACEAE	8/57	fr, s
		Chiapas, Mexico		
		BORAGINACEAE		
5508	<i>Bourreria ovata</i>	Monroe Co., Fla.	8/55	l, tw, fr
5657	<i>Coldenia greggii</i>	Brewster Co., Tex.	8/55	l, s, fl
5655	<i>Coldenia hispidissima</i>	Brewster Co., Tex.	8/55	l, s
5629	<i>Coldenia Mexicana</i>	Brewster Co., Tex.	8/55	l, s
5869	<i>Cordia alliodora</i>	La Carita, Costa Rica	8/55	0
5631	<i>Heptapterium confertifolium</i>	Brewster Co., Tex.	4/56	0
5721	<i>Heptapterium convolvulaceum</i>	Ward Co., Tex.	8/55	l, s
5499	<i>Heptapterium curassavicum</i>	Monroe Co., Fla.	9/55	l, s, r, fl
5452	<i>Heptapterium leavenworthii</i>	Broward Co., Fla.	8/55	l, s, r, fl
6034	<i>Lappula Virginiana</i>	Washington Co., Md.	7/56	l, s, r
5927	<i>Myosotis scorpioides</i>	Washington Co., Md.	6/56	l, s, fl
5997	<i>Tournefortia graphalodes</i>	Winsted, Conn.	8/55	0
5454	<i>Tournefortia monodelpha</i>	Broward Co., Fla.	0	0
5630	<i>Aechmea Mexicana</i>	Brewster Co., Tex.	8/55	0
5189	<i>Aechmea Mexicana</i>	BROMELIACEAE	8/55	l, s
		C. G. F.		
5482	<i>Bursera simaruba</i>	BURSERACEAE	8/55	l, tw, fr
		Monroe Co., Fla.		
6061	<i>Buxus harlandii</i>	BUXACEAE	8/56	l, s
5293	<i>Simmondsia Chinensis</i>	Chico, Calif.	11/54	pod
		Agnangua, Calif.		

Accession No.	Species	Collection		Source	Date Collected	Plant Part	Hemolytic	Flavonoids	Alkaloids	Tannins
		No.	Date							
6375A	<i>Simmondsia Chinensis</i>	Murrieta, Calif.	6/57	sd	-	0	0	+	0	
6375B	<i>Simmondsia Chinensis</i>	Murrieta, Calif.	6/57	pod	-	0	0	0	0	
6019-O	<i>Cereus parviflorus</i>	Kingston, Jamaica, B. W. I.	10/57	1	-	0	..	..	..
5950-O	<i>Cereus Peruvianus</i> (<i>Cereus cf. stewartii</i>)	May-Pen, Jamaica, B. W. I.	5/57	1	-	0	..	..	0	
5958-O	<i>Cereus Peruvianus</i> (<i>Cereus cf. stewartii</i>)	May-Pen, Jamaica, B. W. I.	5/57	1	-	0	..	..	..
6022-O	<i>Cereus triangularis</i>	Kingston, Jamaica, B. W. I.	10/57	1	-	0	..	..	..
6097	<i>Echinocerous dasycanthus</i>	Brewster Co., Tex.	10/56	w	-	0	..	..	0	
5916-O	<i>Lophophora williamsii</i>	Weslaco, Tex.	9/56	t	-	0	..	..	..
5951-O	<i>Melocactus communis</i>	May-Pen, Jamaica, B. W. I.	5/57	1	-	0	..	..	..
6016-O	<i>Nopalea coccinellifera</i>	Kingston, Jamaica, B. W. I.	10/57	1	-	0	..	..	0	
5949-O	<i>Opuntia dillenii</i>	May-Pen, Jamaica, B. W. I.	5/57	1	-	0	..	..	..
6286	<i>Opuntia grahamii</i>	Candelaria, Tex.	4/57	w	-	0	..	..	0	
5941-O	<i>Opuntia spinosissima</i>	Clarendon, Jamaica, B. W. I.	5/57	1	-	0	..	..	..
6023-O	<i>Opuntia tuna</i>	Kingston, Jamaica, B. W. I.	10/57	1	-	0	..	..	..
5957-O	<i>Opuntia tuna</i>	May-Pen, Jamaica, B. W. I.	6/57	1	-	0	..	..	..
6048	<i>Callitricha heterophylla</i>	Baltimore Co., Md.	8/56	w	-	0	..	..	..
5106	<i>Lobelia puberula</i>	Talbot Co., Md.	8/54	1, s, r, fl	-	0	..	..	..
5116	<i>Lobelia spathitica</i>	Baltimore Co., Md.	8/54	1, s, r, fl	-	0	..	..	..
5443	<i>Canna indica</i>	Palm Beach, Fla.	8/55	1, s	-	0	..	..	..
6418	<i>Capparis cf. indica</i>	Chiapas, Mexico	8/57	1, s	-	0	..	..	..
6411	<i>Capparis cf. oxysepala</i>	Chiapas, Mexico	8/57	1, s	-	0	..	..	..
5431	<i>Polanisia tenuifolia</i>	Lake Co., Fla.	8/55	w	-	0	..	..	..
5036	<i>Sambucus pubens</i>	Winsted, Conn.	8/54	1, s	-	0	..	..	..
5086	<i>Sambucus simpsonii</i>	Pinellas Co., Fla.	8/54	1, s, fr	-	0	..	..	..
5020	<i>Viburnum alnifolium</i>	Berkshire Co., Mass.	8/54	1, s	-	0	..	..	..
5040	<i>Viburnum dentatum</i>	Torrington, Conn.	8/54	s, fr	-	0	..	..	..
3840	<i>Viburnum nudum</i>	Wake Co., N. C.	4/54	1, tw, fl	-	0	..	..	..
6028-O	<i>Viburnum tinus</i>	Charleston, S. C.	10/57	1, s	-	0	..	..	..
5951	<i>Agrostemma githago</i>	Anne Arundel Co., Md.	5/56	1, s, r, fl	-	0	..	..	..
5943	<i>Cerasium viscosum</i>	Baltimore Co., Md.	5/56	1, s, r, fl	-	0	..	..	..
5929	<i>Holosteum umbellatum</i>	Washington Co., Md.	5/56	1, s, r, fl	-	0	..	..	..
5950	<i>Scleranthus annuus</i>	Anne Arundel Co., Md.	5/56	1, s, r	-	0	..	..	..
5119	<i>Stellaria aquatica</i>	York Co., Pa.	8/54	1, s, r, fl	-	0	..	..	..

5076	<i>Casuarina equisetifolia</i>	<i>CASUARINACEAE</i>	Pinellas Co., Fla.	8/54	1, s, fr	0	0	0	0
5919-O	<i>Celastrus orbiculatus</i>	<i>CELASTRACEAE</i>	Montgomery Co., Pa.	9/56	1	0	0	0	0
5921-O	<i>Euonymus atropurpureus</i>		Montgomery Co., Pa.	10/56	fr	0	0	0	0
5719	<i>Allerolfea occidentalis</i>	<i>CHENOPDIACEAE</i>	Pecos Co., Tex.	9/55	1, s	0	0	0	0
5594	<i>Atriplex canescens</i>		Jeff Davis Co., Tex.	8/55	1, tw, fr	0	0	0	0
5633	<i>Atriplex obonata</i>		Brewster Co., Tex.	8/55	1, s, fl	0	0	0	0
5740	<i>Atriplex sp.</i>		Pecos Co., Tex.	9/55	1, s, fl	0	0	0	0
5571	<i>Atriplex sp.</i>		Brewster Co., Tex.	8/55	1, s, r	0	0	0	0
5650	<i>Atriplex sp.</i>		Brewster Co., Tex.	8/55	1, s, r, fl	0	0	0	0
5716	<i>Chenopodium ambrosioides</i>		Terrell Co., Tex.	8/55	1, s, r, fl	0	0	0	0
5577	<i>Chenopodium incanum</i>		Jeff Davis Co., Tex.	9/55	1, s, r, fl	0	0	0	0
5554	<i>Chenopodium sp.</i>		Jeff Davis Co., Tex.	8/55	1, fl, tw	0	0	0	0
5406	<i>Chenopodium sp.</i>		Jeff Davis Co., Tex.	8/55	1, s, r	0	0	0	0
5402	<i>Chenopodium sp.</i>		Leon Co., Fla.	7/55	1, s, r	0	0	0	0
5744	<i>Cycloloma atriplicifolium</i>		Leon Co., Fla.	7/55	1, s, fl	0	0	0	0
5498	<i>Salicornia Virginica</i>		Ward Co., Tex.	9/55	1, s, r, fl	0	0	0	0
5674	<i>Salsola pestifer</i>		Monroe Co., Fla.	8/55	1, s, r	0	0	0	0
5560	<i>Suaeda linearis</i>		Brewster Co., Tex.	8/55	1, s, r	0	0	0	0
5663	<i>Suaeda suffrutescens (Dondia suffrutescens)</i>		Monroe Co., Fla.	8/55	1, s, r	0	0	0	0
6022	<i>Helianthemum Canadense</i>	<i>CISTACEAE</i>	Brewster Co., Tex.	8/55	1, s, r, fl	0	0	0	0
6031	<i>Cladonia submittis</i>	<i>GLADONIACEAE (LICHENES)</i>	Accomac Co., Va.	7/56	1, s, r	0	0	0	0
5899-O	<i>Clethra alnifolia</i>	<i>CLETHRACEAE</i>	Aiken, S. C.	7/56	1, s	0	0	0	0
5465	<i>Conocarpus erectus</i>	<i>COMBRETACEAE</i>	Burlington Co., N. J.	8/56	1, fl	0	0	0	0
5070	<i>Laguncularia racemosa</i>		Dade Co., Fla.	8/55	1, tw	0	0	0	0
5370	<i>Tradescantia fluminensis</i>	<i>COMMELINACEAE</i>	Pinellas Co., Fla.	8/54	1, s, fr	0	0	0	0
5223	<i>Actinospurmum angustifolium</i>	<i>COMPOSITEAE</i>	Leon Co., Fla.	7/55	1, s, r	0	0	0	0
5496	<i>Ambrosia hispida</i>		Franklin Co., Fla.	10/54	1, s, r, fl	+	0	0	0
5693	<i>Ambrosia trifida</i>		Monroe Co., Fla.	8/55	1, s, r	0	0	0	0
6083	<i>Arnica whitneyi (Arnica cordifolia)</i>		Val Verde Co., Tex.	9/55	1, s, fl	0	0	0	0
5113	<i>Artemisia candata</i>		Alberta, Canada	9/56	1, s, r, fl	0	0	0	0
5753	<i>Artemista filifolia</i>		Sussex Co., Del.	8/54	1, s	0	0	0	0
5624	<i>Artemisia Mexicana</i>		Ward Co., Tex.	9/55	1, s, fl	0	0	0	0
5271	<i>Aster Carolinianus</i>		Jeff Davis Co., Tex.	8/55	1, s	0	0	0	0
5034	<i>Aster acuminatus</i>		Watulla Co., Fla.	10/54	1, s, fl	0	0	0	0
5273	<i>Aster exilis</i>		Winsted, Conn.	8/54	1, s, fr	0	0	0	0
5239	<i>Aster Novae Angliae</i>		Baltimore Co., Md.	10/54	1, s, r, fl	0	0	0	0
5746	<i>Aster tenuicifolius</i>		Pecos Co., Tex.	9/55	1, s, fl	0	0	0	0

Accession No.	Species	Source	Date Collected	Plant Part	Hemolysis	Flavonoids	Alkaloids	Tannins
COMPOSITAE								
5079	<i>Aster tenuifolius</i>	Pinellas Co., Fla.	8/54	1, s, r	-	-	-	0
5199	<i>Aster undulatus</i>	Alleghany Co., Md.	9/54	1, s, r, fl	-	-	-	0
5747	<i>Aster sp.</i>	Reeves Co., Tex.	9/55	1, s, fl	-	-	-	0
5258	<i>Aster sp.</i>	Caldoun Co., Fla.	10/54	1, s, r	-	-	-	0
5272	<i>Baccharis glomeruliflora</i>	Wakulla Co., Fla.	10/54	1, s, fl	-	-	-	0
5574	<i>Baccharis glutinosa</i>	Brewster Co., Tex.	8/55	1, tw, fl	-	-	-	0
5875	<i>Baccharis halimifolia</i>	Ocean Co., N. J.	8/56	1, s	-	-	-	0
5737	<i>Baccharis havardiae</i>	Pecos Co., Tex.	9/55	1, tw	-	-	-	0
5661	<i>Bahia absinthiifolia</i>	Brewster Co., Tex.	8/55	1, s	-	-	-	0
5649	<i>Baltia pedata</i>	Brewster Co., Tex.	8/55	1, s, fl	-	-	-	0
5604	<i>Baileya multiradiata</i>	Brewster Co., Tex.	8/55	1, s, fl	-	-	-	0
5611	<i>Berlandiera lyrata</i>	Jeff Davis Co., Tex.	8/55	1, s, r, fl	-	-	-	0
5097	<i>Berlandiera subacaulis</i>	Orange Co., Fla.	8/55	1, s, fl	-	-	-	0
5123	<i>Bidens connosa</i>	8/54	1, s, r	-	-	-	-	0
5103	<i>Bidens coronata</i>	York Co., Pa.	8/54	1, s, r, fl	-	-	-	0
5121	<i>Bidens frondosa</i>	Anne Arundel Co., Md.	8/54	1, s, r, fl	-	-	-	0
5209	<i>Bidens laevis</i>	8/54	1, s, r, fl	-	-	-	-	0
5610	<i>Bidens leptcephala</i>	Baltimore Co., Md.	9/54	1, s, r, fl	-	-	-	0
5044	<i>Bidens mitis</i>	Jeff Davis Co., Tex.	8/55	1, s	-	-	-	0
5234	<i>Bidens nashii</i>	Taylor Co., Fla.	8/54	1, s	-	-	-	0
5883-	<i>Bidens sp.</i>	Jefferson Co., Fla.	10/54	1, s, r, fl	-	-	-	0
5157	<i>Boltonia asteroides</i>	Lester, Pa.	8/56	w, r	-	-	-	0
5470	<i>Borrichia arborescens</i>	Windsor, N. C.	9/54	1, s, r, fl	-	-	-	0
5559	<i>Brickellia laciniata</i>	Monroe Co., Fla.	8/55	1, tw, fr	-	-	-	0
5054	<i>Cacaia stricta</i>	Brewster Co., Tex.	8/55	1, s, tw	-	-	-	0
5397	<i>Calyptocarpus vialis</i>	Levy Co., Fla.	8/54	1, s, r, fl	-	-	-	0
5046	<i>Carpephorus corymbosus</i>	Leon Co., Fla.	7/55	w	-	-	-	0
5762	<i>Chrysoma pauciflosculosa</i>	Taylor Co., Fla.	8/54	1, s, fl, r	-	-	-	0
5765	<i>Chrysopsis cuneifolia</i>	Gulf Co., Fla.	10/55	1, s, fl	-	-	-	0
5213	<i>Chrysopsis flexuosa</i>	Gulf Co., Fla.	10/55	1, s, r, fl	-	-	-	0
5093	<i>Chrysopsis graminifolia</i> var. <i>latifolia</i>	Leon Co., Fla.	10/54	1, s, r, fl	-	-	-	0
5250	<i>Chrysopsis hispida</i>	Polk Co., Fla.	8/54	1, s	-	-	-	0
5764	<i>Chrysopsis mista</i>	Leon Co., Fla.	10/54	1, s, fl	-	-	-	0
5435	<i>Chrysopsis subulata</i>	Gulf Co., Fla.	8/55	1, s, r, fl	-	-	-	0
5738	<i>Chrysothamnus sp.</i>	Ward Co., Tex.	9/55	1, tw, fl	-	-	-	0
5246	<i>Cirsium Carolinianum</i>	Liberty Co., Fla.	10/54	1, s, fl	-	-	-	0
5425	<i>Cirsium lecontei</i>	Jackson Co., Miss.	8/55	w	-	-	-	0
5053	<i>Cirsium nuttallii</i>	Levy Co., Fla.	8/54	1, s, fl	-	-	-	0
5543	<i>Cirsium undulatum</i>	Jeff Davis Co., Tex.	8/55	1, s, r, fl	-	-	-	0
5041	<i>Cirsium f. vitatum</i>	Taylor Co., Fla.	8/54	1, s, r, fl	-	-	-	0
5613	<i>Conza coulteri</i>	Jeff Davis Co., Tex.	8/55	1, s, tw	-	-	-	0
6140	<i>Coreopsis coulteri</i>	Pecos Co., Tex.	10/55	1, s, fl	-	-	-	0
5042	<i>Coreopsis leavenworthii</i>	Taylor Co., Fla.	8/54	1, s, fl, r	-	-	-	0
5429	<i>Coreopsis leavenworthii</i> var. <i>curtissii</i>	Dixie Co., Fla.	8/55	w	-	-	-	0
5526	<i>Coreopsis leavenworthii</i> var. <i>lewtonii</i>	Manatee Co., Fla.	8/55	1, s, r, fl	-	-	-	0

6156	<i>Cosmos bipinnatus</i>	11/56	Baltimore, Md.	l, s, r, fl
5656	<i>Dysosmia acerosa</i>	8/55	Brewster Co., Tex.	w
5695	<i>Dysosmia pentachaea</i>	9/55	Pecos Co., Tex.	l, s, fl
5703	<i>Dysosmia polychaea</i>	9/55	Brewster Co., Tex.	l, s, fl
5734	<i>Dysosmia sp.</i>	9/55	Jeff Davis Co., Tex.	l, s, r, fl
5561	<i>Engelmannia primulifida</i>	9/55	Jeff Davis Co., Tex.	l, s, r, fl
5888-O	<i>Erechtites hieracifolia</i>	8/55	Jeff Davis Co., Tex.	l, s, r, fl
5405	<i>Erigeron bonariensis</i>	8/55	Perry Co., Pa.	l, fl, r
5741	<i>Erigeron Canadensis</i>	7/55	Leon Co., Fla.	w
5690	<i>Eupatorium</i>	7/55	Reeves Co., Tex.	l, s, r, fl
5276	<i>Eupatorium aromaticum</i>	9/55	Val Verde Co., Tex.	l, s, r, fl
5002	<i>Eupatorium coelestium</i>	11/54	Leon Co., Fla.	l, s, fl
5028	<i>Eupatorium dubium</i>	8/54	New Boston, Mass.	l, s, r
5277	<i>Eupatorium incarnatum</i>	8/54	Leon Co., Fla.	l, s, r, fl
5280	<i>Eupatorium jacundanum</i>	11/54	St. Johns Co., Fla.	l, s, r, fl
5166	<i>Eupatorium leptocephalum</i>	11/54	Leon Co., Fla.	l, s, r, fl
5279	<i>Eupatorium leucodiplosis</i>	10/54	St. Johns Co., Fla.	l, s, r, fl
52225	<i>Eupatorium perfoliatum</i>	5/56	Guanacaste, Costa Rica	l, s, r, fl
5903	<i>Eupatorium purpureum</i>	8/54	Colebrook, Conn.	l, s, r, fl
5014	<i>Eupatorium rugosum</i>	8/55	Monroe Co., Fla.	l, s, r, fl
5484	<i>Flaveria biuncata</i>	8/55	Wakulla Co., Fla.	l, tw
5228	<i>Flaveria linearis</i>	10/54	Pecos Co., Tex.	l, s, r, fr
5743	<i>Flaveria trinervia</i>	9/55	Brewster Co., Tex.	l, tw, fl
5670	<i>Flourensia cernua</i>	8/55	Brewster Co., Tex.	w
6141	<i>Flourensia cernua</i>	10/55	Jeff Davis Co., Tex.	l, s, fl
5551	<i>Franseria acanthicarpa</i>	8/55	Val Verde Co., Tex.	l, s, r, fl
5551	<i>Flourensia cernua</i>	9/55	Reeves Co., Tex.	l, s, fl
5569	<i>Gaillardia amblyodon</i>	9/55	Ward Co., Tex.	l, s, fl
5751	<i>Gaillardia pulchella</i>	9/55	Sandisfield, Mass.	l, s, r
5750	<i>Gnaphalium uliginosum</i>	8/54	Pecos Co., Tex.	l, s, r
5022	<i>Grindelia sp.</i>	9/55	Brewster Co., Tex.	l, s, r, fl
5732	<i>Guizotria sarothrae</i>	8/55	Brewster Co., Tex.	l, s, r, fl
5645	<i>Haploesthes greggii</i>	8/55	Wakulla Co., Fla.	l, s, fl
5664	<i>Haplopanus heterophyllus</i>	8/55	Brewster Co., Tex.	l, s, r, fl
5639	<i>Helianthus angustifolius</i>	10/54	Brewster Co., Tex.	l, s, r, fl
5720	<i>Helianthus autumnale</i> var. <i>parviflorum</i>	8/55	Pecos Co., Tex.	l, s, r, fl
5235	<i>Helianthus cilium</i>	9/55	Petersburg, Va.	l, s, r, fl
5536	<i>Helianthus radula</i>	10/54	Jeff Davis Co., Tex.	l, s, r, fl
5569	<i>Helianthus microcephalum</i>	8/55	Brewster Co., Tex.	w
5686	<i>Helianthus debilis</i>	11/54	Wakulla Co., Fla.	l, s, r, fl
5215	<i>Helianthus floridanus</i>	8/54	Pinellas Co., Fla.	l, s, r, fl
5683	<i>Helianthus strumosus</i>	8/54	Raritan, N.J.	l, s, r
5151	<i>Helianthus laevius</i>	10/54	Wakulla Co., Fla.	l, s, r, fl
5733	<i>Helianthus radula</i>	9/55	Ward Co., Tex.	l, s, r, fl
5283	<i>Helianthus sp.</i>	11/54	Newport Co., Pa.	l, s, r, fl
5072	<i>Heterocheila subazellaris</i>	8/55	Ward Co., Tex.	l, s, r, fl
5005	<i>Hymenoclea monogyna</i>	8/55	Brewster Co., Tex.	l, tw
5221				
5724				
5893-O				
5730				
5557				

Accession No.	Species	Source	Date Collected	Plant Part	-Collect		Tannins
					Alkaloids	Flavonoids	
COMPOSITAE							
5409	<i>Hypochoeris brasiliensis</i>	Leon Co., Fla.	7/55	w	0	0	
5658	<i>Inula ambrosioides</i>	Brewster Co., Tex.	8/55	l, s	0	0	
6021	<i>Krigia Virginica</i>	Accomack Co., Va.	7/56	l, s, fl	0	0	
5882-O	<i>Lachnaia Canadensis</i>	Delaware Co., Pa.	7/56	l, r	0	0	
5957	<i>Lapsana communis</i>	King George Co., Va.	8/56	l, s, r, fl	0	0	
5229	<i>Liatris elegans</i>	Jefferson Co., Fla.	10/54	l, s, r, fl	0	0	
5222	<i>Liatris gracilis</i>	Wakulla Co., Fla.	10/54	l, s, r, fl	0	0	
5237	<i>Liatris graminifolia</i> var. <i>elegantula</i>	Leon Co., Fla.	10/54	l, s, r, fl	0	0	
5203	<i>Liatris scariosa</i>	Allegany Co., Md.	9/54	l, s, r, fl	0	0	
5251	<i>Liatris spicata</i> var. <i>resinosa</i>	Calhoun Co., Fla.	10/54	l, s, r, fl	0	0	
5587	<i>Ligodesmia sp.</i>	Jeff Davis Co., Tex.	8/55	l, s, r, fl	0	0	
5504	<i>Melanthera parvifolia</i>	Monroe Co., Fla.	8/55	w	0	0	
6326	<i>Montanoa rosei</i>	Sonora, Mexico	5/57	s	0	0	
5566	<i>Parthenium incanum</i>	Jeff Davis Co., Tex.	8/55	l, s, fl	0	0	
5626	<i>Pectis angustifolia</i>	Brewster Co., Tex.	8/55	l, s, tw, fl	0	0	
5588	<i>Perezia urigetii</i>	Jeff Davis Co., Tex.	8/55	l, s, fl	0	0	
5664	<i>Perityle vaseyi</i>	Brewster Co., Tex.	8/55	l, s, fl	0	0	
5528	<i>Phoebeanthus grandiflorus</i>	Pinellas Co., Fla.	8/55	l, s, r, fl	0	0	
5372	<i>Phoebeanthus tenuifolius</i>	Liberty Co., Fla.	7/55	l, s, r, fl	0	0	
6043	<i>Ficaria heterocotyles</i>	Livingston Co., N.J. --	7/56	l, s, r, fl	0	0	
5212	<i>Polypteron integrifolia</i>	Leon Co., Fla.	10/54	l, s, r, fl	0	0	
5647	<i>Porphyrium scoparium</i>	Brewster Co., Tex.	8/55	l, s, r, fl	0	0	
5985	<i>Psilostrophe tagetina</i>	Brewster Co., Tex.	6/56	l, s, r, fl	0	0	
5616	<i>Psilostrophe tagetina</i>	Jeff Davis Co., Tex.	8/55	l, s, fl	0	0	
6013	<i>Pyrhophyllum Carolinianum</i>	Va.	7/56	l, s, r, fl	0	0	
5558	<i>Ratibida columnifera</i> (<i>Ratibida columnaris</i>)	Brewster Co., Tex.	8/55	l, s, r, fl	0	0	
5057	<i>Rudbeckia cf. heterophylla</i>	Levy Co., Fla.	8/54	l, s, r, fl	0	0	
5869-O	<i>Rudbeckia hirta</i>	Montgomery Co., Pa.	7/56	l, fl	0	0	
5892-O	<i>Rudbeckia laciniata</i>	Newport Co., Pa.	8/56	l, fl, r	0	0	
5679	<i>Rudbeckia mollis</i>	Calhoun Co., Fla.	9/55	l, s, r, fl	0	0	
5718	<i>Scheuchzeria sp.</i>	Jeff Davis Co., Tex.	9/55	l, s, r	0	0	
5607	<i>Senecio longilobus</i>	Jeff Davis Co., Tex.	8/55	l, s, fl	0	0	
5987	<i>Senecio longilobus</i>	Brewster Co., Tex.	6/56	l, s, r, fl	0	0	
5704	<i>Siemssia calvua</i>	Terrell Co., Tex.	9/55	l, s, r, fl	0	0	
5202	<i>Solidago caesia</i>	Alleghany Co., Md.	9/54	l, s, r, fl	0	0	
5874-O	<i>Solidago sempervirens</i>	Ocean Co., N.J.	8/56	w, r	0	0	
5118	<i>Solidago speciosa</i>	Baltimore Co., Md.	8/54	l, s, r, fl	0	0	
5873-OA	<i>Solidago sp.</i>	Montgomery Co., Pa.	8/56	l, s	0	0	
5873-OB	<i>Solidago sp.</i>	Montgomery Co., Pa.	8/56	basal l	0	0	
5873-OC	<i>Solidago sp.</i>	Montgomery Co., Pa.	8/56	r	0	0	
5873-OD	<i>Solidago sp.</i>	Montgomery Co., Pa.	8/56	w, r	0	0	
5872-O	<i>Solidago sp.</i>	Montgomery Co., Pa.	10/54	l, s, r, fl	0	0	
5233	<i>Solidago sp.</i>	Wakulla Co., Fla.	9/54	l, s, r, fl	0	0	
5201	<i>Solidago sp.</i>	Allegany Co., Md.	9/54	l, s, r, fl	0	0	
5200	<i>Solidago sp.</i>	Allegany Co., Md.	9/54	l, s, r, fl	0	0	

Accession No.	Species	Source	Date Collected	Plant Part	Hemolysis	Flavonoids	Alkaloids	Tannin
5129	<i>Raphanus</i> sp.	York Co., Pa.	8/54	l, s, r, fl	-	0	0	0
55552	<i>Rorippa officinalis</i> (<i>Rorippa nasturtium-aquaticum</i>)	Jeff Davis Co., Tex.	8/55	l, s, fl	-	0	0	0
59988	<i>Sisymbrium</i> (<i>Norta</i>) <i>altissimum</i>	Winsted, Conn.	6/56	l, s, fl	-	0	0	0
5913-0	<i>Sisymbrium altissimum</i>	Pullman, Wash.	9/56	l, tw	-	0	0	0
5928	<i>Thlaspi arvense</i>	Washington Co., Md.	5/56	l, s, r, fl	-	0	0	0
5914-0	<i>Thlaspi arvense</i>	Whitman Co., Wash.	9/56	tw, fl, sd	-	0	0	0
5381	<i>Warea amplexifolia</i>	Liberty Co., Fla.	7/55	w	-	0	0	0
		CUCURBITACEAE						
5696	<i>Apodanthera undulata</i>	Jeff Davis Co., Tex.	9/55	l, s	-	0	0	0
5672	<i>Cucurbita foetidissima</i>	Brewster Co., Tex.	8/55	l, s	-	0	0	0
5547	<i>Cucurbita foetidissima</i>	Brewster Co., Tex.	8/55	fr	-	0	0	0
5007	<i>Echinocystis lobata</i>	Lincolndale, N. Y.	8/54	l, s, fl, fr	-	+	0	0
5388	<i>Melothria pendula</i>	Leon Co., Fla.	7/55	w	-	0	0	0
5532	<i>Monardica charantia</i>	Pinellas Co., Fla.	8/55	l, s	-	0	0	0
		CYCADACEAE						
5268	<i>Cycas revoluta</i>	Leon Co., Fla.	10/54	l, s	-	0	0	0
5534	<i>Zamia integrifolia</i>	Pinellas Co., Fla.	8/55	l, s, r	-	0	0	0
		CYPERACEAE						
5513	<i>Cyperus ligularis</i>	Collier Co., Fla.	8/55	l, s, r, fr	-	0	0	0
5394	<i>Cyperus ovalaris</i>	Leon Co., Fla.	7/55	w	-	0	0	0
5416	<i>Cyperus polystachyos</i> var. <i>texensis</i>	Leon Co., Fla.	8/55	w	-	0	0	0
6068	<i>Ditchium arundinaceum</i>	Charles Co., Md.	8/56	l, r	-	0	0	0
5067	<i>Eleocharis cellulosa</i>	Levy Co., Fla.	8/54	l, s, r, fl	-	0	0	0
5396	<i>Ptilocaryya setipoides</i>	Leon Co., Fla.	7/55	w	-	0	0	0
5156	<i>Rhynchospora corniculata</i>	Windsor, N. C.	9/54	l, r, fl	-	0	0	0
		CYRILLACEAE						
5218	<i>Cyrilla parvifolia</i> (<i>Cyrilla parvifolia</i>)	Wakulla Co., Fla.	10/54	l, s, fr	-	0	0	0
		DIAPENSIAEAE						
5993	<i>Pyridanthera barbulata</i>	Atsion, N. J.	6/56	l, s	-	0	0	0
		DIPSACACEAE						
5994	<i>Succisa</i> sp.	Batam, Conn.	6/56	l, s, r, fl	-	0	0	0
6046	<i>Shepherdia Canadensis</i>	Livingston Falls, Alberta, Canada	8/56	l, s	-	0	0	0
5038	<i>Equisetum sylvaticum</i>	Torrington, Conn.	8/54	l, s	-	0	0	0
		ERICACEAE						
6117A	<i>Arbutus andrachne</i>	Chico, Calif.	10/56	l, s	-	0	0	0
6117B	<i>Arbutus andrachne</i>	Chico, Calif.	10/56	tw	-	0	0	0
6002	<i>Gaultheria procumbens</i>	Wingsted, Conn.	6/56	l, s, r	-	0	0	0
6082	<i>Ledum Groenlandicum</i>	Livingston Falls, Alberta, Canada	9/56	+	-	+	+	+

		Frederick Co., Md.	10/54	1, s, tw		
5275	<i>Rhododendron nudiflorum</i>	C. G. F. C. G. F. C. G. F.	10/56 10/56 10/56	1 fr fr	.. 0 0	.. 0 0
6149A	<i>Erythroxylon coca</i>	0	0	0	0	0
6149B	<i>Erythroxylon coca</i>	0	0	0	0	0
6149C	<i>Erythroxylon coca</i>	0	0	0	0	0
5390	<i>Acalypha gracilens</i>	Leon Co., Fla. Leon Co., Fla.	7/55 9/54	w 1, s, r, fl	++	++
5185	<i>Acalypha ostryoefolia</i>	Terrell Co., Tex.	9/55	w	0	0
5710	<i>Acalypha radians</i>	Highlands Co., Fla.	8/55	fr, tw	0	0
5437	<i>Aleurites moluccana</i>	Liberty Co., Fla.	7/55	w	0	0
5380	<i>Croton argyranthemus</i>	Jackson Co., Miss.	8/55	w	0	0
5427	<i>Croton capitatus</i>	Jeff Davis Co., Tex.	8/55	w	0	0
5537	<i>Croton corymbulosus</i>	Brewster Co., Tex.	8/55	1, s, r, fr	0	0
5636	<i>Croton leucophyllas</i>	Monroe Co., Fla.	8/55	1, s, fl	0	0
5501	<i>Croton linearis</i>	Terrell Co., Tex.	8/55	1, s, r	0	0
5699	<i>Croton monanthogynus</i>	Brewster Co., Tex.	9/55	1, s, r, fl	0	0
5646	<i>Croton Neo Mexicanus</i>	Ward Co., Tex.	8/55	1, s, r, fl	0	0
5728	<i>Croton Texensis</i>	Taylor Co., Fla.	9/55	1, s, r, fl	0	0
5045	<i>Croton sp.</i>	Leon Co., Fla.	8/54	1, s, fl, r	0	0
5393	<i>Crotonopeltis linearis</i>	Jeff Davis Co., Tex.	7/55	w	0	0
5608	<i>Cryphanta albida</i>	Monroe Co., Fla.	8/55	1, s	0	0
5511	<i>Diteaxis bioguttata</i>	Monroe Co., Fla.	8/55	1, s, r	0	0
5497	<i>Euphorbia buxifolia</i>	Monroe Co., Fla.	8/55	w	0	0
5509	<i>Euphorbia heterophylla</i>	Lee Co., Fla.	8/55	w	0	0
5523	<i>Euphorbia sp.</i>	Baltimore Co., Md.	8/55	1, s	0	0
5146	<i>Euphorbia sp.</i>	Val Verde Co., Tex.	9/54	1, s, r, fl	0	0
5697	<i>Jatropha spathulata</i>	Candellaria, Tex.	9/55	1, tw	0	0
6291	<i>Jatropha spathulata</i>	Pinellas Co., Fla.	4/57	s	0	0
5087	<i>Ricinus communis</i>	Orange Co., Fla.	8/54	1, s	0	0
5098	<i>Stillingia spathulata</i>	Ward Co., Tex.	9/55	1, s, r, fr	0	0
5749	<i>Stillingia sp.</i>	Brewster Co., Tex.	8/55	1, s, r, fl	0	0
5614	<i>Tragia Neo Mexicana</i>	FAGACEAE	10/54	1, s	0	0
5050	<i>Castanea alnijolia</i>	Levy Co., Fla.	8/54	1, s	0	0
5008	<i>Fagus grandifolia</i>	Winsted, Conn.	8/54	1, s	0	0
6323	<i>Quercus alba</i>	Sonora, Mexico	8/54	fr	0	0
5745	<i>Quercus karrawitii</i>	Ward Co., Tex.	5/57	b	0	0
5241	<i>Quercus imbricaria</i>	Baltimore Co., Md.	9/55	1, tw	0	0
5442	<i>Quercus myrtifolia</i>	Hightlands Co., Fla.	10/54	1, s	0	0
5248	<i>Quercus Virginiana</i> (<i>Q. minima</i>)	Cahiloun Co., Fla.	8/55	1, tw	0	0
		ROQUERIACEAE	10/54	1, s	0	0
5557	<i>Fouquieria splendens</i>	Jeff Davis Co., Tex.	8/55	1, s	0	0
6397	<i>Iaria columnaris</i>	Rosario, Baja Calif., Mexico	7/57	b	0	0
5605	<i>Ephedra Nevadensis</i> var. <i>aspera</i> (<i>E. aspera</i>)	GNETACEAE	-	-	0	0
5075	<i>Scenola plumieri</i>	Brewster Co., Tex.	8/55	1, s, fr	0	0
		GOODENIACEAE	8/54	1, s, fr	0	0

Accession -Collection	Species	Source	Date Collected	Plant Part	Hemolysis	Flavonoids	Alkaloids	Tannins
GRAMINEAE								
5153	<i>Andropogon glomeratus</i>	Windsor, N. C.			9/54	1, r	0	0
5077	<i>Andropogon littoralis</i>	Pinellas Co., Fla.			8/54	1, s, r, fl	0	0
5254	<i>Andropogon sp.</i>	Liberty Co., Fla.			10/54	1, r	0	0
5255	<i>Andropogon sp.</i>	Liberty Co., Fla.			10/54	1, r	0	0
5220	<i>Anthoxanthia villosa</i>	Wakulla Co., Fla.			10/54	1, r	0	0
5976	<i>Arrhenatherum elatius</i>	Anne Arundel Co., Md.			10/54	1, r, fr	0	0
6062	<i>Arundo donax</i>	Chico, Calif.			6/56	w	0	0
6063	<i>Arundo donax</i>	Chico, Calif.			8/56	s	0	0
6064	<i>Arunia pinnii</i>	Chico, Calif.			8/56	s	0	0
5958	<i>Avena fatua</i>	King George Co., Va.			8/56	1, s	0	0
5138	<i>Bambusa dissimulator</i>	C. G. F.			5/56	w	0	0
5141	<i>Bambusa longispiculata</i>	C. G. F.			9/54	1, s	0	0
5139	<i>Bambusa malinensis</i>	C. G. F.			9/54	1, s	0	0
5140	<i>Bambusa multiplex</i>	C. G. F.			9/54	1, s	0	0
5494	<i>Bambusa peruviana</i>	C. G. F.			9/54	1, s	0	0
5517	<i>Bambusa polymorpha</i>	C. G. F.			8/56	1, s	0	0
5142	<i>Bambusa textilis</i>	C. G. F.			8/55	1, s	0	0
5478	<i>Bambusa vulgaris</i>	C. G. F.			9/54	1, s	0	0
5183	<i>Cerachus echinatus</i>	Leon Co., Fla.			8/55	1, s	0	0
5078	<i>Chloris glauca</i>	Pinellas Co., Fla.			9/54	1, r, fr	0	0
5944	<i>Dactylis glomerata</i>	Baltimore Co., Md.			9/54	1, r	0	0
5952	<i>Danthonia spicata</i>	Charles Co., Md.			5/56	1, r, fr	0	0
5954	<i>Deschampsia flexuosa</i>	Charles Co., Md.			5/56	1, s, r	0	0
5219	<i>Digitaria villosa</i>	Wakulla Co., Fla.			5/56	1, s, r	0	0
5230	<i>Digitaria villosa</i>	Jefferson Co., Fla.			10/54	1, s, r, fl	0	0
5061	<i>Distichlis spicata</i>	Levy Co., Fla.			10/54	1, r, fr	0	0
5104	<i>Distichlis spicata</i>	Queen Anne's Co., Md.			8/54	1, r	0	0
5403	<i>Echinachloa colonum</i>	Leon Co., Fla.			8/54	1, s, r	0	0
5058	<i>Echinachloa crusgalli</i>	Levy Co., Fla.			7/55	1, s, r	0	0
5107	<i>Echinachloa crusgalli</i>	Sussex Co., Del.			8/54	1, s, fl	0	0
5128	<i>Elymus Virginicus</i>	York Co., Pa.			8/54	1, r, fl	0	0
5257	<i>Eragrostis elatior</i>	Liberty Co., Fla.			8/54	1, s, r, fl	0	0
5217	<i>Eriogonum giganteum</i>	Wakulla Co., Fla.			10/54	1, r	0	0
5150	<i>Eriogonum giganteum</i>	Petersburg, Va.			10/54	1, r, fr	0	0
5004	<i>Heteropogon melanocarpus</i>	Leon Co., Fla.			9/54	1, r, fr	0	0
5847	<i>Holcus lanata</i>	Baltimore Co., Md.			8/54	1, s, r	0	0
5983	<i>Hordeum vulgare</i>	Baltimore Co., Md.			5/56	1, s, r, fl	0	0
5953	<i>Lolium multiflorum</i>	Charles Co., Md.			5/56	w	0	0
5252	<i>Manisuris sp.</i>	Calhoun Co., Fla.			5/56	1, s, r	0	0
5195	<i>Muhlenbergia cf. frondosa</i>	York Co., Pa.			8/54	1, r	0	0
5126	<i>Muhlenbergia sp.</i>	York Co., Pa.			8/54	1, r	0	0
5127	<i>Muhlenbergia sp.</i>	York Co., Pa.			8/54	1, r, fl	0	0
5391	<i>Panicum achaei</i>	Leon Co., Fla.			8/54	1, r, fl	0	0
5108	<i>Panicum sp.</i>	Sussex Co., Del.			7/55	w	0	0
6011	<i>Parapholis incurva (Photoliurus incurvus)</i>	Va.			8/54	1, r, fr	0	0

5115	<i>Paspalum</i>	Sussex Co., Del.
5975	<i>Pheum pratense</i>	Anne Arundel Co., Md.
6120	<i>Phyllostachys bambusoides</i>	Chico, Calif.
5949	<i>Poa pratensis</i>	Baltimore Co., Md.
5231	<i>Saccobletis striata</i>	Jefferson Co., Fla.
6040	<i>Secale cereale</i>	Dundee, N.Y.
5149	<i>Setaria cf. corrugata</i>	Caroline Co., Va.
5184	<i>Setaria lutescens</i>	Leon Co., Fla.
5216	<i>Sorghastrum secundum</i>	Wakulla Co., Fla.
5130	<i>Sorghum vulgare</i>	York Co., Pa.
6126	<i>Thysanolaena maxima</i>	C. G. F.
5090	<i>Rhynchosciarum roseum</i> (<i>Tricholaena rosea</i>)	Polk Co., Fla.
5984	<i>Triticum aestivum</i>	Baltimore Co., Md.
6018	<i>Zea mays</i>	Md.
		GUTTIFERAE
6080A	<i>Garcinia spicata</i>	C. G. F.
6080B	<i>Garcinia spicata</i>	C. G. F.
6080C	<i>Garcinia spicata</i>	C. G. F.
6089A	<i>Garcinia spicata</i>	C. G. F.
6089B	<i>Garcinia spicata</i>	C. G. F.
6089C	<i>Garcinia spicata</i>	C. G. F.
5375 etc.	<i>Hypericum sphaerocarpum</i> (<i>H. cistifolium</i>)	Gadsden Co., Fla.
		Costa Rica
		HYDROPHYLACEAE
5682	<i>Nama haywardii</i>	Brewster Co., Tex.
6423	<i>Phaebia</i> sp.	Baja Calif., Mexico
		JUGLANDACEAE
5232	<i>Carya aquatica</i>	Jefferson Co., Fla.
5440A	<i>Carya Floridana</i>	Highlands Co., Fla.
5535	<i>Juglans microcarpa</i> (<i>J. rupestris</i>)	Highlands Co., Fla.
5581	<i>Juglans microcarpa</i> (<i>J. rupestris</i>)	Jeff Davis Co., Tex.
		LABIATAE
6162	<i>Coleus</i> (cult.)	Baltimore, Md.
5265	<i>Dicerandra linearifolia</i>	Leon Co., Fla.
5171	<i>Lepechinia confusa</i>	Glen Dale, Md.
6424	<i>Salvia mellifera</i>	Baja Calif., Mexico
5247	<i>Lycopus</i> sp.	Calhoun Co., Fla.
5556	<i>Marrubium vulgare</i>	Jeff Davis Co., Tex.
5518	<i>Meliaena leucodendron</i>	Lee Co., Fla.
5029	<i>Mentha Canadensis</i> (<i>M. arvensis</i> var. <i>villosa</i>)	Berkshire Co., Mass.
5600	<i>Monarda</i> cf. <i>punctata</i>	Jeff Davis Co., Tex.
6070	<i>Origanum vulgare</i>	Millerton, N.Y.
5653	<i>Tetraneura conifera</i>	Brewster Co., Tex.
5010	<i>Trichostema dichotomum</i>	Torrington, Conn.
		LAURACEAE
3789	<i>Cinnamomum camphora</i>	McIntosh Co., Ga.
5445	<i>Persea Americana</i>	Palm Beach Co., Fla.

Accession No.	Species	Date Collected	Plant Part	Hemolysis	Flavonoids	Alkaloids	Tannins
5441	<i>Persea humilis</i>	8/55	1, tw.	-	+	0	..
5861	<i>Phoebe Mexicana</i>	4/56	1, s, b	-	0	0	..
5458A	<i>Umbellularia California</i>	8/55	fr	-	0	0	0
5458B	<i>Umbellularia California</i>	8/55	1, r	-	0	0	0
5711	<i>Acacia berlandieri</i>	9/55	1, s	..	0	+	..
6203	<i>Acacia chorophylla</i>	2/57	1, tw	-	0	+	+
6087A	<i>Acacia confusa</i>	9/56	1	-	0	0	0
6087B	<i>Acacia confusa</i>	9/56	tw	-	0	0	0
6087C	<i>Acacia confusa</i>	9/56	fr	-	0	0	0
5579	<i>Acacia cuspidata</i>	8/55	1, s, fl	-	0	0	0
6204	<i>Acacia koa</i>	2/57	1, tw	-	0	0	0
6313	<i>Acacia occidentalis</i>	5/57	b	-	0	0	0
6213A	<i>Acacia pallens</i>	7/57	1	-	0	0	0
6213B	<i>Acacia pallens</i>	7/57	b	-	0	0	0
6213C	<i>Acacia pallens</i>	7/57	r	-	0	0	0
6206	<i>Acacia pallens</i>	2/57	1, tw	-	0	0	0
6152A	<i>Acacia sendtneri</i>	11/56	1, s	-	0	0	0
6152B	<i>Acacia sobolata</i>	11/56	tw	-	0	0	0
5092	<i>Aeschynomene Americana</i>	8/54	1, s	-	0	0	0
6026-O	<i>Albizia julibrissin</i>	10/57	1, tw, b	-	0	0	0
5480	<i>Albizia lebbeck</i>	8/55	1, tw	-	0	0	0
6053 A	<i>Albizia polystachya</i>	8/56	1	-	0	0	0
6053 B	<i>Albizia polystachya</i>	8/56	tw	-	0	0	0
6053 C	<i>Albizia polystachya</i>	8/56	r	-	0	0	0
5228	<i>Alysicarpus vaginalis</i>	10/54	1, s, r, fr	-	0	0	0
5089	<i>Amorpha cf. devinkelleri</i>	8/54	1, s, fl	-	0	0	0
5625	<i>Astragalus earlei</i>	8/55	1, s, fl	-	0	0	0
6286	<i>Astragalus earlei</i>	4/57	w	-	0	0	0
6289	<i>Astragalus leucophyllus</i>	6/57	1, s, fl	-	0	0	0
5960-O	<i>Bauhinia aculeata</i>	6/57	1, s, fl	-	0	0	0
5144	<i>Bauhinia acuminata</i>	9/54	1, s	-	0	0	0
5143	<i>Bauhinia acuminata</i>	9/54	1, s	-	0	0	0
5597	<i>Bauhinia forficata</i>	8/55	1, s	-	0	0	0
5191	<i>Bauhinia huppiana</i>	9/54	1, s	-	0	0	0
5192	<i>Bauhinia millericella</i>	9/54	1, s, fr	-	0	0	0
5193	<i>Bauhinia pauleinia</i>	9/54	1, s	-	0	0	0
5188	<i>Bauhinia polycarpa</i>	9/54	1, s	-	0	0	0
5195	<i>Bauhinia reticulata</i>	9/54	1, s	-	0	0	0
5596	<i>Bauhinia retusa</i>	8/55	1, s	-	0	0	0
6165A	<i>Bauhinia vanzijlii</i>	11/56	1	-	0	0	0
6165B	<i>Bauhinia vanzijlii</i>	11/56	tw	-	0	0	0
5194	<i>Bauhinia variegata</i>	9/54	1, s	-	0	0	0
5196	<i>Bauhinia variegata</i>	9/54	1, s	-	0	0	0
3006	<i>Caesalpinia vesicaria</i>	8/52	1	-	0	0	0

6415	<i>Calliantha tondusii</i>	Chiapas, Mexico	1, s	
5059	<i>Cassia aspera</i>	Levy Co., Fla.	8/54	1, s, r, fl
5640	<i>Cassia baumiioides</i>	Brewster Co., Tex.	8/55	1, s, r
5639	<i>Cassia durangensis</i>	Brewster Co., Tex.	8/55	1, s, r
6066A	<i>Cassia excelsa</i>	C. G. F.	8/56	1, s, r
6066B	<i>Cassia excelsa</i>	C. G. F.	8/56	1, s, r
6066C	<i>Cassia excelsa</i>	C. G. F.	8/56	tw
5539	<i>Cassia lindheimeriana</i>	Jeff Davis Co., Tex.	8/56	fl
5638	<i>Cassia lindheimeriana</i>	Brewster Co., Tex.	8/55	1, s, fl
5560	<i>Cassia roemeriana</i>	Jeff Davis Co., Tex.	8/55	1, s, fl
6075A	<i>Cassia spectabilis</i>	C. G. F.	8/55	1, s, r, fl
6075B	<i>Cassia spectabilis</i>	C. G. F.	9/56	1, s, r, fl
6076A	<i>Cassia spectabilis</i>	C. G. F.	9/56	tw
6076B	<i>Cassia spectabilis</i>	C. G. F.	9/56	1, s, r
5522	<i>Cassia sp.</i>	Collier Co., Fla.	8/55	1, s
6078A	<i>Ceratonia siliqua</i>	C. G. F.	9/56	1, s
6078B	<i>Ceratonia siliqua</i>	C. G. F.	9/56	1, s
6078C	<i>Ceratonia siliqua</i>	C. G. F.	9/56	1, s, r, fr
5102	<i>Chapmannia floridana</i>	Lake Co., Fla.	8/54	1, s, r
5432	<i>Chapmannia floridana</i>	Lake Co., Fla.	8/55	w
5267	<i>Crotonaria intermedia</i>	Leon Co., Fla.	10/54	1, s, fr
5165	<i>Crotalaria spectabilis</i>	Leon Co., Fla.	9/54	1, s, fr
5259	<i>Crotalaria usaramensis</i>	Liberty Co., Fla.	10/54	1, s, r, fr
5459	<i>Dalbergia brownei</i>	Broward Co., Fla.	8/55	tw
5735	<i>Dalea alopecuroides</i>	Jeff Davis Co., Tex.	9/55	1, s, r
5709	<i>Dalea argyrea</i>	Val Verde Co., Tex.	9/55	1, s, r
5565	<i>Dalea aurea</i>	Jeff Davis Co., Tex.	8/55	1, s, fl
5601	<i>Dalea frutescens</i>	Jeff Davis Co., Tex.	8/55	1, s, r, fl
5589	<i>Dalea lachnostachys</i>	Jeff Davis Co., Tex.	8/55	1, s, r, fl
5742	<i>Dalea terminalis</i>	Ward Co., Tex.	9/55	1, s, r, fl
5422	<i>Daubentonia drummondii</i>	Jackson Co., Miss.	8/55	1, s, fl
5444	<i>Delonix regia</i>	Palm Beach Co., Fla.	8/55	1, s, fr
5487	<i>Desmanthus cooleyi</i>	Monroe Co., Fla.	8/55	1, tw
5583	<i>Desmodium canum</i>	Jeff Davis Co., Tex.	8/55	1, s, fl
6293	<i>Enterolobium cyclocarpum</i>	Levy Co., Fla.	8/54	1, s, r, fl
5269	<i>Erythrina herbacea</i>	Cuyotenango, Guatemala	4/57	sd
5371A	<i>Erythrina herbacea</i>	Leon Co., Fla.	7/55	1, s
5371B	<i>Erythrina herbacea</i>	Leon Co., Fla.	7/55	1, s
5706	<i>Byssinhardtia angustifolia</i>	Brewster Co., Tex.	8/56	1, tw, fr
6045	<i>Hedysarum sp.</i>	Alberta, Canada	8/56	1, s
5592	<i>Hoffmannseggia drepanocarpa</i>	Brewster Co., Tex.	8/55	1, s, fl, fr
5438	<i>Indigofera hirsuta</i>	Highlands Co., Fla.	8/55	1, s, r, fl
5708	<i>Indigofera lindheimeriana</i>	Val Verde Co., Tex.	9/55	1, s
6407	<i>Inga laurina</i>	Chiapas, Mexico	8/57	1, s
5878	<i>Inga sp.</i>	Costa Rica	4/56	1, s, b
5731	<i>Kramera grayi</i>	Ward Co., Tex.	9/55	w
5483	<i>Leucaena leucocephala</i>	Monroe Co., Fla.	8/55	1, tw
5568	<i>Leucaena retusa</i>	Jeff Davis Co., Tex.	8/55	w
5420	<i>Lupinus westianus</i>	Ostaloosa Co., Fla.	8/55	w

Accession No.	Species	Source	Date Collected	Plant Part	Hemolysi	Flavonoids	Alkaloids	Tannins
LEGUMINOSAE								
5481	<i>Lysiloma Bahamensis</i>	Monroe Co., Fla.	8/55	1, tw	-	0	0	0
6320	<i>Lysiloma microphylla</i> (<i>L. watsontii</i>)	Sonora, Mexico	5/57	b	0	0	0	0
5870-O	<i>Melilotus alba</i>	Montgomery Co., Pa.	7/56	1	0	0	0	0
5881-O	<i>Melilotus officinalis</i>	Lester, Pa.	8/56	1, fl	0	0	0	0
5622	<i>Mimosa flexuosa</i>	Jeff Davis Co., Tex.	8/55	1, tw	0	0	0	0
5460	<i>Nepunia Floridana</i>	Broward Co., Fla.	8/55	w	0	0	0	0
6084	<i>Oxytropis monilicola</i>	Alberta, Canada	9/56	1, s, r, fl	0	0	0	0
6159A	<i>Peltophorum Africanum</i>	C. G. F.	11/56	1	0	0	0	0
6159B	<i>Peltophorum Africanum</i>	C. G. F.	11/56	tw	0	0	0	0
6159C	<i>Peltophorum Africanum</i>	C. G. F.	11/56	fr	0	0	0	0
5047	<i>Petaiostemon carneus</i>	Taylor Co., Fla.	8/54	1, s, fl, r	0	0	0	0
5329	<i>Petaiostemon carneus</i>	Pinellas Co., Fla.	8/54	1, s, r, fl	0	0	0	0
5546	<i>Petaiostemon oligophyllus</i>	Jeff Davis Co., Tex.	8/55	1, s, r, fl	0	0	0	0
5942-O	<i>Pascidia erythrina</i>	Clarendon, Jamaica, B. W. I.	8/55	1, s, r, fl	0	0	0	0
5475	<i>Pascidia pascipula</i>	Monroe Co., Fla.	5/57	b	0	0	0	0
6065	<i>Pithecellobium floricaule</i>	C. G. F.	8/55	1, tw, fr	0	0	0	0
5488	<i>Pithecellobium keyense</i>	Monroe Co., Fla.	8/56	1, tw	0	0	0	0
6322	<i>Pithecellobium Mexicanum</i>	Sonora, Mexico	8/55	1, tw	0	0	0	0
6419	<i>Pithecellobium pachyphylloides</i>	Chiapas, Mexico	5/57	b	0	0	0	0
6420	<i>Pithecellobium undulatum</i>	Sonora, Mexico	8/57	1, s, fr	0	0	0	0
5479	<i>Pithecellobium unguis-cati</i>	Monroe Co., Fla.	8/57	sd	0	0	0	0
5572	<i>Prosopis juliflora</i>	Brewster Co., Tex.	8/55	1, tw	0	0	0	0
5573	<i>Prosopis juliflora</i>	Brewster Co., Tex.	8/55	fr	0	0	0	0
6052A	<i>Pterogyne nitens</i>	C. G. F.	8/56	1, tw	0	0	0	0
6052B	<i>Pterogyne nitens</i>	C. G. F.	8/56	1, s	0	0	0	0
6052C	<i>Pterogyne nitens</i>	C. G. F.	8/56	tw	0	0	0	0
5096	<i>Rhynchosia cinerea</i>	Orange Co., Fla.	8/54	1, s	0	0	0	0
5563	<i>Rhynchosia Texana</i>	Jeff Davis Co., Tex.	8/55	1, s	0	0	0	0
6054A	<i>Somanea saman</i>	C. G. F.	8/56	1	0	0	0	0
6054B	<i>Somanea saman</i>	C. G. F.	8/56	tw	0	0	0	0
6160A	<i>Schotia Transvaalensis</i>	C. G. F.	11/56	tw	0	0	0	0
6160B	<i>Schotia Transvaalensis</i>	C. G. F.	11/56	tw	0	0	0	0
5545	<i>Sophora secundiflora</i>	Jeff Davis Co., Tex.	8/55	1, tw	0	0	0	0
5713A	<i>Sophora secundiflora</i>	Val Verde Co., Tex.	9/55	sd	0	0	0	0
5713B	<i>Sophora secundiflora</i>	Val Verde Co., Tex.	9/55	fr	0	0	0	0
5088	<i>Sophora tormentosa</i>	Pinellas Co., Fla.	8/54	1, s, fr	0	0	0	0
5880-O	<i>Strophostyles helvola</i>	Philadelphia, Pa.	8/56	1	0	0	0	0
6412	<i>Smeelia Panamensis</i>	Chiapas, Mexico	8/57	1	0	0	0	0
5099	<i>Tamarindus indica</i>	Lake Co., Fla.	8/54	1, s, fr	0	0	0	0
6205A	<i>Trachylobium hornemannianum</i>	C. G. F.	8/54	1, s	0	0	0	0
6205B	<i>Trachylobium hornemannianum</i>	C. G. F.	8/54	tw	0	0	0	0
5956	<i>Vicia sp. (cult.)</i>	Charles Co., Md.	5/56	1, s, fl	0	0	0	0
5456	<i>Vigna marina</i>	Broward Co., Fla.	8/55	w	0	0	0	0
5204	<i>Allium cernuum</i>	Allegany Co., Md.	9/54	1, r, fl	-	0	0	0

5895-O	<i>Allium cernuum</i>	Perry Co., Pa.	8/56	1, fl, r
5011	<i>Allium trioccum</i>	Colebrook, Conn.	8/54	t, r
6021-O	<i>Aloe vulgaris</i>	Kingston, Jamaica, B. W. I.	10/57	1
5023	<i>Clintonia borealis</i>	Sandisfield, Mass.	8/54	1, s
5364	<i>Eremurus sp.</i>	Kerman, Iran	5/55	1, r, crown
5365	<i>Eremurus sp.</i>	Kerman, Iran	5/55	0
5366	<i>Eremurus sp.</i>	Sonora, Mexico	0	0
6318	<i>Heliocarpus sp.</i>	Montgomery Co., Pa.	5/57	s
5902-O	<i>Hemerocallis sp.</i>	Gresham, Ore.	10/57	bu
6030-O	<i>Lilium auratum</i> var. <i>platyphyllum</i>	Gresham, Ore.	10/57	bu
6031-O	<i>Lilium Formosanum</i>	Gresham, Ore.	10/57	bu
6032-O	<i>Lilium hansonii</i>	Gresham, Ore.	10/57	bu
6033-O	<i>Lilium henryi</i>	Gresham, Ore.	10/57	bu
6034-O	<i>Lilium Japonicum</i>	Gresham, Ore.	10/57	bu
6035-O	<i>Lilium longiflorum</i>	Gresham, Ore.	10/57	bu
6036-O	<i>Lilium maritimum</i> var. <i>album</i>	Gresham, Ore.	10/57	bu, r
6037-O	<i>Lilium Nepalense</i>	Gresham, Ore.	10/57	bu, r
6041-O	<i>Lilium parvulum</i> var. <i>giganteum</i>	Gresham, Ore.	10/57	bu, r
6038-O	<i>Lilium pumilum</i>	Gresham, Ore.	10/57	bu, r
6039-O	<i>Lilium regale</i>	Gresham, Ore.	10/57	bu, r
6040-O	<i>Lilium speciosum</i>	Gresham, Ore.	10/57	bu, r
5986-O	<i>Lilium tigrinum</i>	Philadelphia, Pa.	7/57	bu, r
6003	<i>Maurandium Canadense</i>	Winsted, Conn.	7/57	1, s
6290	<i>Noaea Texana</i>	Alpine, Tex.	6/56	1, s, r
6388	<i>Sansieveria angustiflora</i>	Belle Glade, Fla.	4/57	1, s, fl
6395	<i>Sansieveria angustiflora</i>	Belle Glade, Fla.	7/57	1
6394	<i>Sansieveria desertii</i>	Belle Glade, Fla.	7/57	+
6390	<i>Sansieveria trifasciata</i>	Belle Glade, Fla.	7/57	0
6392	<i>Sansieveria trifasciata</i>	Belle Glade, Fla.	7/57	0
6396	<i>Sansieveria trifasciata</i>	Belle Glade, Fla.	7/57	0
5009	<i>Smilax herbacea</i>	Belle Glade, Fla.	7/57	0
6001	<i>Stephanopus roseus</i>	New Boston, Mass.	8/54	1, s, fr
6019	<i>Tulipa sp.</i>	Winsted, Conn.	6/56	1, s, r
6020	<i>Uvularia perfoliata</i>	Baltimore Co., Md.	7/56	1, s, fr, bu
6081	<i>Xerophyllum tenax</i>	Queen Ann Co., Md.	7/56	1, s
6047	<i>Zigadenus elegans</i>	Alberta, Canada	8/56	1
		Alberta, Canada	7/56	1, s
5555	<i>Ceratilia sinuata</i>	LORASACEAE	0	0
5754	<i>Mentzelia sp.</i>	Jeff Davis Co., Tex.	8/55	1, s, fl
		Ward Co., Tex.	9/55	1, s, fl
5580	<i>Buddleja scordioides</i>	LOGANIACEAE	0	0
5412	<i>Spigelia Mariannica</i>	Jeff Davis Co., Tex.	8/55	1, tw, fl
		Jefferson Co., Fla.	7/55	w
5662	<i>Phoradendron engelmannii</i>	LORANTHACEAE	0	0
5012	<i>Lycopodium annotinum</i>	Jeff Davis Co., Tex.	8/55	1, s, tw, fr
5016	<i>Lycopodium clavatum</i>	LYCOPIDIACEAE	0	0
5021	<i>Lycopodium obscurum</i>	Colebrook, Conn.	8/54	fd
		Sheffield, Mass.	8/54	fd
		Sandisfield, Mass.	0	++
			0	0

Accession No.	Species	Collection- Date	Source	Plant Part	Hemolysis	Flavonoids	Alkaloids	Tannins
5063	<i>Ammannia coccinea</i>	8/54	Levy Co., Fla. Alleghany Co., Md.	1, s, fl, r 9/54	-	0	0	++ +
5198	<i>Cuphea petiolata</i>	8/54	Taylor Co., Fla.	1, s, r, fl	-	0	+	++
5048	<i>Lythrum lanceolatum</i>	8/54	Ladentown, N. Y.	1, s, r	-	0	+	+
5006	<i>Lythrum salicaria</i>	8/54	Windsor, N. C.	1, s, fl	-	0	0	+
5154	<i>Rotala ramosior</i>	9/54		1, s, r, fr	-	0	0	+
5378	<i>Ilicium Floridanum</i>	7/55	Gadsden Co., Fla.	1, tw	-	0	0	++ +
5419	<i>Magnolia grandiflora</i>	8/55	Calhoun Co., Fla.	fr	-	0	0	++ +
5900-O	<i>Magnolia macrophylla</i>	8/56	Philadelphia, Pa.	1, fr	-	0	0	++ +
5901-O	<i>Magnolia stellata</i>	8/56	Philadelphia, Pa.	1, s	-	0	0	++ +
5898-O	<i>Magnolia Virginiana</i>	8/56	Burlington Co., N. J.	1	-	0	0	++ +
6161A	<i>Byrsinima crassifolia</i>	11/56	C. G. F.	1	-	0	0	++ +
6161B	<i>Byrsinima crassifolia</i>	11/56	C. G. F.	tw	-	0	0	++ +
5502	<i>Byrsinima lucida</i>	8/55	Monroe Co., Fla.	1, tw	-	0	0	++ +
5652	<i>Janusia gracilis</i>	8/55	Brewster Co., Tex.	1, s, fl	-	0	0	++ +
5667	<i>Abutilon incanum</i>	8/55	Brewster Co., Tex.	1, s, fl	-	0	0	++ +
6312	<i>Abutilon sonorae</i>	5/57	Sonora, Mexico	r	-	0	0	++ +
6311	<i>Abutilon sonorae</i>	5/57	Sonora, Mexico	1, s	-	0	0	++ +
6042	<i>Alticea officinalis</i>	7/56	Monroe Co., N. Y.	1, s, fl	-	0	0	++ +
6007	<i>Althaea rosea</i>	7/56	Baltimore Co., Md.	1, s, sd	-	0	0	++ +
5473	<i>Gavioidea crispum</i>	8/55	Monroe Co., Fla.	w	-	0	0	++ +
5632	<i>Hibiscus denudatus</i>	8/55	Brewster Co., Tex.	1, s, fl	-	0	0	++ +
5080	<i>Hibiscus rosa-sinensis</i>	8/54	Pinellas Co., Fla.	1, s	-	0	0	++ +
5448	<i>Kosteletzkya altheaeifolia</i>	8/55	Palm Beach Co., Fla.	w	-	0	0	++ +
5389	<i>Sida campinifolia</i>	7/55	Leon Co., Fla.	w	-	0	0	++ +
5550	<i>Sphaeralcea angustifolia</i> var. <i>cuspisata</i>	8/55	Jeff Davis Co., Tex.	1, s, tw, fl	-	0	0	++ +
5612	<i>Sphaeralcea</i> sp.	8/55	Jeff Davis Co., Tex.	1, s	-	0	0	++ +
5083	<i>Urena lobata</i>	8/54	Pinellas Co., Fla.	1, s	-	0	0	++ +
5135	<i>Asadirachta indica</i>	9/54	C. G. F.	1, s	-	0	0	++ +
6416	<i>Guarea tropillio</i>	8/57	Chiapas, Mexico	1, s	-	0	0	++ +
5755	<i>Melia azedarach</i>	9/55	Pecos Co., Tex.	1, s	-	0	0	++ +
5091	<i>Thalia geniculata</i>	8/54	Folk Co., Fla.	1, s	-	0	0	++ +
5413	<i>Calycocarpum lyonii</i>	7/55	Jefferson Co., Fla.	w	-	0	0	++ +
5450	<i>Ficus aurea</i>	8/55	Broward Co., Fla.	1, tw	-	0	0	++ +
5064	<i>Ficus carica</i>	8/54	Levy Co., Fla.	1, s	-	0	0	++ +
6316	<i>Ficus colomifolia</i>	5/57	Sonora, Mexico	1	-	0	0	++ +

Accession No.	Species	Source	Plant Part	Hemolysis	Flavonoids	Alkaloids	Tannins
5689	<i>Menodora longiflora</i>	Terrell Co., Tex.	9/55 1, s, r, fl	-	0	0	++
6116A	<i>Olea Europaea</i>	Chico, Calif.	10/56 1	-	+	0	0
6116B	<i>Olea Europaea</i>	Chico, Calif.	10/56 tw	-	0	0	++
5031	<i>Syringa vulgaris</i>	New Boston, Mass.	8/54 1, s	-	0	0	0
5722	<i>Gaura engelmannii</i>	Ward Co., Tex.	9/55 7/55 w	1, s	-	0	0
5398	<i>Gaura parviflora</i>	Leon Co., Fla.	8/54 1	1, s	-	0	0
5085	<i>Jussiaea angustifolia</i>	Pinellas Co., Fla.	9/54 1	1, s, r, fl	-	0	0
5155	<i>Ludwigia alata</i>	Windsor, Conn.	9/54 1	1, s, r, fl	-	0	0
5399	<i>Ludwigia arcuata</i>	Leon Co., Fla.	7/55 w	1, s, r, fl	-	0	0
5274	<i>Ludwigia natans</i>	Wakulla Co., Fla.	10/54 1	1, s, r, fl	-	0	0
5226	<i>Ludwigia sphaerocarpa</i>	Leon Co., Fla.	10/54 1	1, s, r, fl	-	0	0
5602	<i>Oenothera greggii</i>	Jeff Davis Co., Tex.	8/54 1	1, s, r, fl	-	0	0
5003	<i>Oenothera sp.</i>	Leon Co., Fla.	8/54 1	1, s, r, fl	-	0	0
5729	<i>Oenothera sp.</i>	Ward Co., Tex.	9/55 1, s, fl	1, s, r, fl	-	0	0
6036	<i>Botrychium Virginianum</i>	Washington Co., Md.	7/56 1, s	-	++	++	++
071	<i>Eriogonum (Epiphagus) Virginianum</i>	OROBANCHACEAE	Winsted, Conn.	9/56 1, s, r	-	0	0
6033	<i>Cypripedium acaule</i>	ORCHIDACEAE	Anne Arundel Co., Md.	7/56 1, s, r	-	0	0
6072	<i>Epipactis helleborine</i>	PALMAE	Southfield, Mass.	9/56 1, s, fl	-	0	0
6302	<i>Acrommia scleroarpa</i>	C.G. F.	2/57 1, tw, fr	-	0	0	0
5133	<i>Astrocarium Mexicanum</i>	C.G. F.	9/54 1, s	-	0	0	0
5186	<i>Astrocarium standleyanum</i>	C.G. F.	9/54 1, s	-	0	0	0
5134	<i>Attalea speciosissima</i>	C.G. F.	9/54 1, s	-	0	0	0
5136	<i>Bactris paucinervia</i>	C.G. F.	9/54 1, s	-	0	0	0
5307	<i>Chamaedorea erumpens</i>	C.G. F.	9/54 1, s, fr	-	0	0	0
6166A	<i>Copernicia cerifera</i>	C.G. F.	11/54 1, s	-	0	0	0
6166B	<i>Copernicia cerifera</i>	C.G. F.	11/56 1	-	0	0	0
6125A	<i>Heterospathe elata</i>	C.G. F.	11/56 tw	-	0	0	0
6125B	<i>Heterospathe elata</i>	C.G. F.	10/56 1	-	0	0	0
6125C	<i>Heterospathe elata</i>	C.G. F.	10/56 fl	-	0	0	0
6125D	<i>Heterospathe elata</i>	C.G. F.	10/56 tw	-	0	0	0
5187	<i>Orbignya barbistiana</i>	C.G. F.	10/56 fr	-	0	0	0
5197	<i>Polyandrococcus cardescens</i>	C.G. F.	9/54 1, husk, fr	-	0	0	0
5131	<i>Pseudophoenix vrijefera</i>	C.G. F.	9/54 1, s	-	0	0	0
5363	<i>Pseudophoenix vrijefera</i>	C.G. F.	8/54 1, s	-	0	0	0
6154	<i>Pseudophoenix vrijefera</i>	C.G. F.	5/55 fr, s	-	0	0	0
6200A	<i>Pseudophoenix vrijefera</i>	C.G. F.	11/56 fr	-	0	0	0
6200B	<i>Pseudophoenix vrijefera</i>	C.G. F.	1/57 tw	-	0	0	0
6200C	<i>Pseudophoenix vrijefera</i>	C.G. F.	1/57 fr	-	0	0	0

Accession No.	Species	Source	Date Collected	Plant Part	Hemolysis	Flavonoids	Alkaloids	Tannins
5147	<i>Polygonum persicaria</i>	Baltimore Co., Md.	9/54	l, s, r, fr	-	0	0	0
5043	<i>Polygonum punctatum</i>	Taylor Co., Fla.	8/54	l, s, fl	-	0	0	0
5066	<i>Acrostichum danaeefolium</i>	Lery Co., Fla.	8/54	fd	-	0	0	..
5015	<i>Athyrium filix-femina</i>	Colebrook, Conn.	8/54	fd	-	0	0	0
6038	<i>Cheilanthes vestita</i>	Washington Co., Md.	7/56	fd	-	0	0	0
5516	<i>Phlebodium aureum</i> (<i>Polyodium a.</i>)	Collier Co., Fla.	8/55	fd	-	+	0	..
5013	<i>Pteris Pensylvanica</i>	Colebrook, Conn.	8/55	fd	-	0	0	..
5462	<i>Pteris Bahamensis</i>	Dade Co., Fla.	8/54	fd, r	-	0	0	0
5461	<i>Pteris vittata</i>	Dade Co., Fla.	8/55	fd	-	0	0	0
6037	<i>Woodisia obtusa</i>	Washington Co., Md.	7/56	fd	-	0	0	..
5974	<i>Woodwardia areolata</i> (<i>Loriinseria areolata</i>)	Anne Arundel Co., Md.	6/56	fd, r	-	0	0	..
5407	<i>Atrichum sp.</i>	New Orleans, La.	7/55	w	-	0	0	0
5052	<i>Eichhornia crassipes</i>	<u>PONTEDERIACEAE</u>	8/54	l, s, fl, r	-	0	0	..
5447	<i>Piaropus paniculatus</i>	Palm Beach Co., Fla.	8/55	w	-	0	0	0
5530	<i>Portulaca oleracea</i>	<u>PORTULACACEAE</u>	8/55	w	-	0	0	..
5675	<i>Portulaca pilosa</i>	Brewster Co., Tex.	8/55	l, s, r, fl	-	0	0	..
	<i>Talinum aurantiacum</i>	Pinellas Co., Fla.	8/55	l, s, fr	-	0	0	..
		Brewster Co., Tex.	8/55	l, s, fr	-	0	0	..
6030	<i>Potamogeton pectinatus</i>	<u>POTAMOGETONACEAE</u>	7/56	l	-	0	0	..
6032	<i>Potamogeton ramosus</i>	Washington, D. C.	7/56	l, s	-	0	0	..
5979	<i>Anagallis arvensis</i>	<u>PRIMULACEAE</u>	6/56	l, s, r, fl, fr	-	0	0	..
5024	<i>Lysimachia ciliata</i>	Frederick Co., Md.	8/54	l, s, fr, r	-	0	0	..
6069	<i>Saxifrage parviflorus</i>	Sandisfield, Mass.	8/56	l, s, r, fl	-	0	0	..
6000	<i>Trientalis borealis</i>	Harford Co., Md.	6/56	l, s, r	-	0	0	..
5521	<i>Grevillea robusta</i>	Winsted, Conn.	8/55	l, tw	-	0	0	..
5210	<i>Monotropa uniflora</i>	<u>PROTEACEAE</u>	8/55	l, tw	-	0	0	..
		Baltimore Co., Md.	10/54	l, s, fl	-	0	0	..
6006	<i>Actaea alba</i>	<u>RANUNCULACEAE</u>	Winsted, Conn.	0	0	0	0	..
6073	<i>Actaea rubra</i>	Southfield, Mass.	6/56	l, s, r, fr	-	0	0	..
5955	<i>Aquilegia Canadensis</i>	Charles Co., Md.	9/56	l, s, r	-	0	0	..
5931	<i>Caltha palustris</i>	Frederick Co., Md.	5/56	l, s, r, fl	-	0	0	0
5591	<i>Clematis drummondii</i> (male)	Jeff Davis Co., Tex.	5/56	l, s, fl	-	0	0	..
5001	<i>Clematis Virginiana</i>	Leon Co., Fla.	8/55	l, s, fl	-	0	0	..
5890-O	<i>Clamatis Virginiana</i>	Perry Co., Pa.	8/54	l	-	0	0	..

5924	<i>Delphinium tricorne</i>	Washington Co., Md.	5/56	1, s, fl
5433A	<i>Ceanothus microphyllus</i>	Polk Co., Fla.	8/55	1, s
5433B	<i>Ceanothus microphyllus</i>	Polk Co., Fla.	8/55	r
6319	<i>Karwinskia humboldtiana</i>	Sonora, Mexico	5/57	1
5701	<i>Karwinskia humboldtiana</i>	Val Verde Co., Tex.	9/55	1, s, fr
6429	<i>Rhamnus crocea</i> var. <i>luscifolia</i>	Baja California, Mexico	9/57	sd
6178A	<i>Rhamnus utilis</i>	Chico, Calif.	12/56	1, s
6178B	<i>Rhamnus utilis</i>	Chico, Calif.	12/56	wd
5453A	<i>Rhizophora mangle</i>	Broward Co., Fla.	8/55	1, tw
5453B	<i>Rhizophora mangle</i>	Broward Co., Fla.	8/55	fr
6029-O	<i>Rhizophora mangle</i>	Port au Prince, Haiti	10/57	b
5886-O	<i>Agrimonia parviflora</i>	Montgomery Co., Pa.	8/56	1, r
5899-O	<i>Amelanchier Canadensis</i>	Perry Co., Pa.	8/56	1
5445	<i>Chrysobalanus icaco</i>	Broward Co., Fla.	8/55	, tw
5152	<i>Colombaster pyracantha</i>	Edenton, N.C.	9/54	1, s, r, fr
5208	<i>Crataegus crus-galli</i>	Garrett Co., Md.	9/54	1, s, r, fr
5207	<i>Crataegus punctata</i>	Garrett Co., Md.	9/54	1, s, r, fr
5885-L	<i>Crataegus sp.</i>	Garrett Co., Md.	9/54	1, s, r, fl
6085	<i>Drypis drummondii</i>	Hosmer, B.C., Canada	8/56	1, fr
5623	<i>Fallugia paradoxa</i>	Jeff Davis Co., Tex.	7/56	1, s, r
5981	<i>Fragaria Virginiana</i>	Frederick Co., Md.	8/55	1, fl, tw
6124A	<i>Licania rigidula</i>	C.G. F.	6/56	1, s, r
6124B	<i>Licania rigidula</i>	C.G. F.	10/56	tw
6167A	<i>Licania rigidula</i>	C.G. F.	11/56	1
6167B	<i>Licania rigidula</i>	C.G. F.	11/56	tw
5026	<i>Potentilla fruticosa</i>	Berkshire Co., Mass.	8/54	1, s, fl, r
5162	<i>Prunus Caroliniana</i>	Leon Co., Fla.	9/54	1, s, r, fl
5110	<i>Prunus persica</i>	Sussex Co., Del.	8/54	1, s
5620	<i>Prunus virens</i>	Jeff Davis Co., Tex.	8/55	1, s
5876-O	<i>Rosa sp.</i>	Ocean City, N.J.	8/56	1, fr
5884-O	<i>Spiraea latifolia</i>	Eucks Co., Pa.	8/56	1, fl
5578	<i>Cephaelanthus occidentalis</i>	Jeff Davis Co., Tex.	8/55	1, tw, fr
5691	<i>Cephaelanthus occidentalis</i>	Val Verde Co., Tex.	9/55	1, s, fl
	<i>Chiococca alba</i>	Monroe Co., Fla.	8/55	1, tw, fr
5468	<i>Chiococca pinnatum</i>	Dade Co., Fla.	8/55	1, tw
6406	<i>Genipa sp.</i>	Chiapas, Mexico	8/57	1, s, fr
5485	<i>Gnetum elliptica</i>	Monroe Co., Fla.	8/55	1, tw
5486	<i>Hamelia patens</i>	Monroe Co., Fla.	8/55	1, tw
6005	<i>Mitchella repens</i>	Vincent, Conn.	6/56	1, s
5471	<i>Morinda rotoc</i>	Monroe Co., Fla.	8/55	1, s, r, fl
5417	<i>Oldenlandia uniflora</i>	Leon Co., Fla.	8/55	1, s, r, fl

Accession No.	Species	Source	Collection No.	Plant Part	Hemolysis	Flavonoids	Alkaloids	Tannins
6100	<i>Citrus limonia</i>	Chico, Calif.	10/56	l, tw fr	-	0	0	0
5159	<i>Citrus sinensis</i>	C. G. F. Chico, Calif.	9/54	0	0	0	0	..
6158	<i>Esenbeckia hartmannii</i>	Sonor, Mexico	11/56	l, tw capsules	+	0	0	0
5294	<i>Esenbeckia hartmannii</i>	Sonor, Mexico	11/54	sd	+	0	0	..
5295	<i>Murraya paniculata</i>	C. G. F. Leon Co., Fla.	10/56	l, tw	+	0	0	0
6150	<i>Poncirus trifoliata</i>	Gadsden Co., Fla. Victor, N. Y.	7/55	l, tw, fr s	0	0	0	..
5368	<i>Ptelea trifoliata</i>	Virginia	7/56	l, tw, fr	+	0	0	..
5373	<i>Zanthoxylum Americanum</i>	Lee Co., Fla.	8/55	l, tw, fr	0	0	0	..
6041	<i>Zanthoxylum clava-herculis</i>	Atenas, Costa Rica	4/56	l, s	+	0	0	..
6016	<i>Zanthoxylum fagara</i>	Baltimore Co., Md.	10/54	l, s	0	0	0	..
5525	<i>Zanthoxylum sp.</i>	Gadsden Co., Fla.	7/55	l, tw	0	0	0	..
5886								
5240	<i>Salix babylonica</i>	<i>SALICACEAE</i>						
5377	<i>Salix Caroliniana</i> (<i>Salix longipes</i>)	Baltimore Co., Md. Gadsden Co., Fla.						
5170	<i>Cardiospermum integrifolium</i>	<i>SAPINDACEAE</i>						
6408	<i>Cupania denaria</i>	Glenn Dale, Md. Chiapas, Mexico	9/54	l, s	0	0	0	..
6079A	<i>Dimocarpus longan</i> (<i>Nephelium longana</i>)	C. G. F.	8/57	l, s, fl	0	0	0	..
6079B	<i>Dimocarpus longan</i> (<i>Nephelium longana</i>)	C. G. F.	9/56	l	+	0	0	..
6079C	<i>Dimocarpus longan</i> (<i>Nephelium longana</i>)	C. G. F.	9/56	tw	+	0	0	..
5544	<i>Sapindus drummondii</i>	Brewster Co., Tex. Terrell Co., Tex.	9/56	fr	0	0	0	..
5698	<i>Sapindus drummondii</i>	Kabul, Afghanistan	8/55	l, tw	0	0	0	..
5312	<i>Sapindus mukorossi</i>	Pinellas Co., Fla.	9/55	l, s, fr	0	0	0	..
5084	<i>Sapindus saponaria</i>	Patulul, Guatemala	2/55	sd, pod	0	0	0	..
6285	<i>Sapindus sp.</i>	Hull	8/54	l, s, fr	0	0	0	..
			4/57					
		<i>SAPOTACEAE</i>						
5477A	<i>Achras sapota</i> (<i>Sapota achras</i>)	Monroe Co., Fla.	8/55	l, tw	0	0	0	..
5477B	<i>Achras sapota</i> (<i>Sapota achras</i>)	Monroe Co., Fla.	8/55	fr	0	0	0	..
5392	<i>Burretia lanuginosa</i>	Leon Co., Fla.	7/55	l, tw	0	0	0	..
5474	<i>Diphlois salicifolia</i>	Monroe Co., Fla.	8/55	l, s, fr	0	0	0	..
		<i>SAXIFRAGACEAE</i>						
5414	<i>Grossularia echinella</i>	Jefferson Co., Fla.	7/55	l, tw	0	0	0	..
5376	<i>Hydrangea quercifolia</i>	Gadsden Co., Fla.	7/55	l, tw	0	0	0	..
5930	<i>Mitchella repens</i>	Frederick Co., Md.	5/56	l, s, r, fl	0	0	0	..
5959-O	<i>Peltiphyllum peltatum</i>	Calaveras Co., Calif.	6/57	w	0	0	0	..
6004	<i>Tiarella cordifolia</i>	Winsted, Conn.	6/56	l, s, r, fl	0	0	0	..
5062	<i>Triglochin striata</i>	Levy Co., Fla.	8/54	l, s, fl	0	0	0	..
5959	<i>Anthriscus majus</i>	Baltimore Co., Md.	5/56	l, s, r, fl	0	0	0	..
5060	<i>Bacopa monnierii</i>	Levy Co., Fla.	8/54	w	0	0	0	..
6044	<i>Castilleja sp.</i>	Alberta, Canada	8/56	l, s	0	0	0	..

5039	<i>Chelone glabra</i>	Torrington, Conn.	8/54 1, s, fl	0
	<i>Gerardia maritima</i>	Pinellas Co., Fla.	8/54 1, s, r, fl	0
5074	<i>Gerardia paupercula</i>	Torrington, Conn.	8/54 1, s, fl, r	0
5037	<i>Gerardia pinetorum</i>	Leon Co., Fla.	8/54 1, s, r, fl	0
5224	<i>Gerardia sp.</i>	Leon Co., Fla.	10/54 1, s, r, fl	0
5211	<i>Gerardia sp.</i>	Wakulla Co., Fla.	10/54 1, s, r, fl	0
5214	<i>Gerardia sp.</i>	Leon Co., Fla.	10/54 1, s, r, fl	0
5270	<i>Gerardia sp.</i>	Leon Co., Fla.	10/54 1, s, r, fl	0
5707	<i>Leucophyllum frutescens</i>	Val Verde Co., Tex.	10/54 1, s, r	0
5897-O	<i>Melampyrum lineare</i>	Perry Co., Pa.	9/55 1, tw	0
5726	<i>Penstemon ambiguus</i>	Ward Co., Tex.	8/56 1, s	0
6428-A	<i>Penstemon speciosissimus</i>	Baja California, Mexico	9/55 w	0
6428-B	<i>Penstemon spectabilis</i>	Baja California, Mexico	9/57 sd	0
5527	<i>Scorpiurus dulcis</i>	Pinellas Co., Fla.	9/57 pod	0
5124	<i>Scrophularia Marianica</i>	York Co., Pa.	8/54 1, s, r, fl	0
5163	<i>Seymeria pectinata</i>	Leon Co., Fla.	9/54 1, s, r, fl	0
6131	<i>Ailanthus altissima (A. coccodendron) umboniflora</i>	Chico, Calif.	10/56 tw	0
6164	<i>Ailanthus altissima (A. coccodendron)</i> R	Chico, Calif.	11/56 1, tw	0
5466	<i>Pieramnia peltandra</i>	Dade Co., Fla.	8/55 1, tw	0
5898	<i>Quassia amara</i>	Guanacaste, Costa Rica	5/56 1, s, b	0
5480	<i>Surianna maritima</i>	Monroe Co., Fla.	8/55 1, tw	0
6074	<i>Capsicum frutescens</i>	Baltimore Co., Md.	9/56 1, s, r, fr	0
5585	<i>Chamaesaracha coronopus</i>	Brewster Co., Tex.	8/55 1, s, r, fl	0
6008	<i>Lycopersicum esculentum</i>	Baltimore Co., Md.	7/56 1, s, r	0
5168	<i>Methysticodendron amesianum</i>	Glenn Dale, Md.	9/54 1, s	0
5634	<i>Nicotiana trigonophylla</i>	Brewster Co., Tex.	8/55 1, s, fl	0
5383	<i>Physalis angulata</i>	Leon Co., Fla.	7/55 w	0
5505	<i>Physalis angustifolia</i>	Monroe Co., Fla.	8/55 w	0
5531	<i>Physalis elliptica</i>	Pinellas Co., Fla.	8/55 w	0
5120	<i>Physalis ixocarpa</i>	York Co., Pa.	8/54 1, s, fr	0
5705	<i>Physalis lobata</i>	Terrell Co., Tex.	9/55 1, s, fr	0
5387	<i>Physalis pruinosa</i>	Leon Co., Fla.	7/55 w	0
5379	<i>Physalis Virginiana</i>	Liberty Co., Fla.	7/55 w	0
5760	<i>Physalis sp.</i>	Jeff Davis Co., Tex.	8/55 1, s, fl	0
5818	<i>Solanum acaule var. pumae</i>	Surgeon Bay, Wis.	2/56 w	0
5819	<i>Solanum ajucoense</i>	Surgeon Bay, Wis.	2/56 w	0
5820	<i>Solanum andigenum</i> cv. <i>Collaraja</i>	Surgeon Bay, Wis.	2/56 w	0
5821	<i>Solanum antipovitchii</i>	Surgeon Bay, Wis.	2/56 w	0
5507	<i>Solanum Bahamense</i>	Surgeon Bay, Wis.	2/56 w	0
5822	<i>Solanum bulbocastanum</i> var. <i>glabrum</i>	Monroe Co., Fla.	8/55 w	0
5823	<i>Solanum chacoense</i>	Surgeon Bay, Wis.	2/56 w	0
5827	<i>Solanum chacoense</i>	Surgeon Bay, Wis.	2/56 w	0
5824	<i>Solanum commersonii</i>	Surgeon Bay, Wis.	2/56 w	0
5825	<i>Solanum curtilobum</i> cv. <i>Shiri</i>	Surgeon Bay, Wis.	2/56 w	0
5826	<i>Solanum demissum</i>	Surgeon Bay, Wis.	2/56 w	0
5575	<i>Solanum elaeagnifolium</i>	Surgeon Bay, Wis.	2/56 w	0
		Brewster Co., Tex.	8/55 1, tw, r	0

Accession No.	Species	Collection	Source	Date Collected	Plant Part	Hemolysis	Flavonoids	Alkaloids	Tannins
5828	<i>Solanum fendleri</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5829	<i>Solanum gibrilulosum</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5830	<i>Solanum gigantopitatum</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5836	<i>Solanum gracile</i>		Leon Co., Fla.	2/56	w	-	0	0	0
5831	<i>Solanum longipedicellatum</i>		Sturgeon Co., Wis.	7/55	w	-	0	0	0
5832	<i>Solanum maculae</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5833	<i>Solanum malinense</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5834	<i>Solanum primatissimum</i> var. <i>heptazygium</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5835	<i>Solanum polyadenium</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5836	<i>Solanum polyrrhachis</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5837	<i>Solanum rostratum</i>		Jeff Davis Co., Tex.	8/55	l, s, fl	-	0	0	0
5838	<i>Solanum rydbinii</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5839	<i>Solanum sativense</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5840	<i>Solanum schottkii</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5835	<i>Solanum stoloniferum</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5841	<i>Solanum torreyi</i>		Leon Co., Fla.	7/55	w	-	0	0	0
5842	<i>Solanum thucacense</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5472	<i>Solanum tuberosum</i> cv. <i>Russet Sebago</i>		Sturgeon Bay, Wis.	2/56	w	-	0	0	0
5843	<i>Solanum verbascoifolium</i>		Dade Co., Fla.	8/55	w	-	0	0	0
5281	<i>Solanum verrucosum</i> var. <i>spectabile</i>		Sturgeon Co., Wis.	2/56	w	-	0	0	0
	<i>Solanum sp.</i>		St. Johns Co., Fla.	11/54	l, s, r, fr	-	0	0	0
5369	<i>Firmiana platanifolia</i> (<i>Sterculia platanifolia</i>)		STERCULIACEAE			-	0	0	0
5752	<i>Tamarix sp.</i>	Leon Co., Fla.	TAMARICACEAE	7/55	l, tw	-	0	0	0
5025	<i>Tarax Canadensis</i>	Pecos Co., Tex.	TAXACEAE	9/55	l, s	-	0	0	0
5374	<i>Dirca palustris</i>	Sandisfield, Mass.	THYMELAEACEAE	8/54	l, s, r	-	0	0	0
5384	<i>Crochorus acutangulus</i>	Gadsden Co., Fla.	TILIACEAE	7/55	l, tw	-	0	0	0
5619	<i>Celtis reticulata</i>	Leon Co., Fla.	ULMACEAE	7/55	l, s, fr	-	0	0	0
5463	<i>Trema micrantha</i> (<i>Trema Floridana</i>)	Jeff Davis Co., Tex.	UMBELLIFERAE	8/55	l, s, fl	-	0	0	0
5996	<i>Aethusa cynapium</i>	Winsted, Conn.		6/56	l, s, r, fl	-	0	0	0
5999	<i>Angelica atropurpurea</i>	Baltimore, Conn.		6/56	l, s, fl	-	0	0	0
6009	<i>Heracleum maximum</i> (<i>H. lanatum</i>)	Calhoun Co., Md.		7/56	l, s	-	0	0	0
5448	<i>Oxybaphus greenmanii</i>	Carroll Co., Md.		8/55	w	-	0	0	0
5977	<i>Pastinaca sativa</i>	Baltimore Co., Md.		6/56	l, s, fl	-	0	0	0
6049	<i>Petroselinum crispum</i> (<i>Apium crispum</i>)	Liberty Co., Fla.		8/56	l, s, r, fl	-	0	0	0
5249	<i>Sium sp.</i>	Winsted, Conn.		10/54	l, s, fl	-	0	0	0
5995	<i>Zizia aurea</i>			6/56	l, s, r, fl	-	0	0	0

Accession No.	Species	Source	Date Collected	Plant Part	Hemolysis	Flavonoids	Alkaloids	Tannins
6414	<i>Costus bakeri</i>	ZINGIBERACEAE Chiapas, Mexico	8/57	I, s	-	0	0	:
5137	<i>Balanites Aegyptiaca</i>	C. G. F. Jeff Davis Co., Tex.	9/54	I, s				
5609	<i>Kallstroemia hirsutissima</i>	Brewster Co., Tex.	8/55	I, s				
5665	<i>Kallstroemia parviflora</i>	Jeff Davis Co., Tex.	8/55	I, s, r, fl				
5617	<i>Larrea divaricata</i>	Ward Co., Tex.	8/55	I, s, fl				
5725	<i>Peganum harmala</i>	Brewster Co., Tex.	8/55	I, s, r, fl				
5627	<i>Peganum Mexicanum</i>	Brewster Co., Tex.	8/55	I, s, fl				
5671	<i>Tribulus terrestris</i>							

of the collections in the present series gentrogenin and correllogenin account for about half of the total genin of 3 to 6%.

As was recently pointed out (10, 11) steroidal sapogenins in *Yucca* seem to be highly concentrated in the seed. Number 6371A is another example of it with 11.1% all as sarsasapogenin. Another newly discovered genin, willagenin (12), reported from *Y. filifera*, appears again in this series in 6369, an unidentified species from Bacanora, Mexico.

The finding of ruscogenin and neoruscogenin in *Ruscus aculeatus* confirms the work of their discoverers (13).

Table II shows that an extremely small proportion of the plants in this series gave a test for saponin (hemolysis) and none of these contained steroidal sapogenins.

Plants containing flavonoids were also scarce.

There was, however, a high incidence of alkaloid bearing plants. Of the 1,000 species listed, 106, or 10%, contained alkaloids. Furthermore, of the 171 species in nine families collected in Texas 35, or 20%, contained alkaloids. Some 64 of these are new to the record.

Too few tests for tannins were made to warrant any generalizations.

REFERENCES

- (1) Wall, M. E., Krider, M. M., Krewson, C. F., Eddy, C. R., Willaman, J. J., Correll, D. S. and Gentry, H. S., THIS JOURNAL, 43, 1(1954).
- (2) Wall, M. E., Krider, M. M., Krewson, C. F., Eddy, C. R., Willaman, J. J., Correll, D. S., and Gentry, H. S., U. S. Dept. Agr., Agr. Research Service Circ. AIC-363, 1954.
- (3) Wall, M. E., Eddy, C. R., Willaman, J. J., Correll, D. S., Schubert, B. G., and Gentry, H. S., THIS JOURNAL, 43, 503(1954).
- (4) Wall, M. E., Eddy, C. R., Willaman, J. J., Correll, D. S., Schubert, B. G., and Gentry, H. S., U. S. Dept. Agr., Agr. Research Service Circ. AIC-367, 1954.
- (5) Wall, M. E., Fenske, C. S., Willaman, J. J., Correll, D. S., Schubert, B. G., and Gentry, H. S., THIS JOURNAL, 44, 438(1955).
- (6) Wall, M. E., Fenske, C. S., Willaman, J. J., Correll, D. S., Schubert, B. G., and Gentry, H. S., U. S. Dept. Agr., Agr. Research Service Circ. ARS-73-4, 1955.
- (7) Wall, M. E., Fenske, C. S., Kenney, H. E., Willaman, J. J., Correll, D. S., Schubert, B. G., and Gentry, H. S., THIS JOURNAL, 46, 653(1957).
- (8) Wall, M. E., Fenske, C. S., Garvin, J. W., Willaman, J. J., Jones, Q., Schubert, B. G., and Gentry, H. S., ibid., 48, 695(1959).
- (9) Walens, H. A., Serota, S., and Wall, M. E., J. Am. Chem. Soc., 77, 5196(1955).
- (10) Woodbury, A. M., Wall, M. E., and Willaman, J. J., Econ. Botany, 15, 79(1961).
- (11) Wall, M. E., and Fenske, C. S., ibid., 15, 131(1961).
- (12) Kenney, H. E., and Wall, M. E., J. Org. Chem., 22, 468(1957).
- (13) Lapin, H., and Sannié, C., Bull. soc. chim. France, 1955, 1552.